Southeast Landscape Plan

A Regional Plan to Guide Sustainable Forest Management

MFRC Southeast Regional Landscape Committee
November 2014

Minnesota Forest Resources Council

Minnesota Forest Resources Council (MFRC)
Landscape Program Document #LP-1114

This document is on the Internet at: http://mn.gov/frc/southeast-committee.html

Information about the Minnesota Forest Resources Council and the Landscape Program can be found at http://mn.gov/frc.

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Executive Summary

Part 1: Purpose and Context

The Sustainable Forest Resources Act (SFRA, Minnesota Statute 89A) provided authorization for the establishment of regional landscape committees to foster landscape-based forest resource planning and coordination. This legislation defined landscape-level planning as *"long-term or broad based efforts that may require extensive analysis or planning over large areas that may involve or require extensive coordination across all ownerships."* It charges regional committees to: 1) include representative interests, 2) serve as a forum to discuss issues, 3) identify and implement an open and public process whereby landscape-level strategic planning can occur, 4) identify sustainable forest resource goals for the landscape and strategies to achieve those goals, and 5) provide regional perspectives on forest sustainability to the Minnesota Forest Resources Council (MFRC).

This planning document represents the ongoing, long-term efforts of the Southeast Regional Landscape Committee to meet these statutory mandates. The Southeast Regional Landscape Committee (henceforth, the Committee) was convened in July of 2002 during the process of producing the first generation of this planning document, called the *Forest Resource Management Plan: Southeast Landscape.* Thirty natural resources organizations consisting of local governing units, non-profit entities, state and federal agencies, the University of Minnesota, local businesses, and landowners identified priorities for the forested landscape. The first-generation landscape plan was approved by the MFRC in 2003. In 2013, the Committee initiated the process of updating the plan, electing to form a small Planning Team of Committee members and MFRC staff to lead the revision process. The revised plan underwent review by the Committee and the public, resulting in this second-generation document, the *Southeast Landscape Plan: A Regional Plan to Guide Sustainable Forest Management* (henceforth, the Plan). The MFRC reviewed and approved this revised Plan in November of 2014.

The MFRC defines the Southeast Landscape as the thirteen most southeastern Minnesota counties; Dodge, Fillmore, Freeborn, Goodhue, Houston, Le Sueur, Mower, Olmsted, Rice, Steele, Wabasha, Waseca, Winona. The landscape contains nearly 5 million total acres of land and water. In order to develop well-informed goals and strategies for the Southeast Landscape, six technical background documents were prepared prior to the revision of this Plan to assess the current resources, needs, and key issues related to forests within this landscape. These reports gathered currently available data on the ecological and socio-economic landscape, guidance from other resource management plans, and insights from key stakeholders in the region. These documents are described in Section 2. They include:

- Resource Atlas
- Conditions and Trends Report
- Demographic Data Report
- Forest Policy Inventory
- Key Stakeholder Survey Report
- Key Stakeholder Focus Groups Report

Data trends indicate that despite the loss of hundreds of thousands of forested acres since European settlement, the quantity of forest lands have stabilized in recent years; and despite over half of the region now consisting of agriculture, large stretches of the forestland in the Blufflands

Ecological Subsection remain intact today, though forest quality is threatened in places. Current data further indicates several key threats and opportunities pertaining to these forestlands. Threats to forest health include habitat loss, growing pressure from invasive species, and potential stress to native species from climate change. Land use change in the region is creating concern over water quality and quantity. Increasing population in parts of the region poses threats to forest cover, such as the large population growth predicted for Olmsted County by the year 2040 (44% increase). Opportunities include the region's high concentration of biodiversity, with many species found nowhere else in the state. Though rising population presents risk of habitat fragmentation, it also provides opportunities for the forest-based leisure and tourism industry and for tapping into local lumber markets in quickly developing areas. Other opportunities to capitalize on the many ecosystem services provided by the region's forests may exist; thorough evaluation of the potential economic benefits of these services is needed. Over 86% of the forestland in the Southeast Landscape is in private ownership, indicating the importance of seizing partnership opportunities with the private landowner community in this region.

In terms of key stakeholder feedback, one of the most pressing issues to arise from the survey and focus group session was the need for long-term, consistent capacity for private landowner education and technical assistance, an area that has seen drastic cuts in Minnesota in recent years. In conjunction with the goal of the Department of Natural Resources (DNR), MFRC, and other agencies to engage the private woodland owner community in land management, stakeholders felt that a top priority should be ensuring that the natural resources professional base, both public and private, is adequate to meet current – and ideally increased – demand. Management of biodiversity, especially in light of a rapidly growing invasive species problem, arose as another key issue among stakeholders. Finally, increased monitoring and accountability of local conservation efforts was seen as necessary to ensure forward progress on southeast Minnesota's forestry goals.

The information and insights gained through these assessments provide a holistic picture of the Southeast Landscape's forest resource and the variety of factors that influence the forested landscape. These insights, in combination with the directions set by the SFRA, the MFRC, and the first generation plan, were used to develop the overall forest management vision for the region – found in Part 2 of this Plan.

Part 2: Strategic Policy Framework

Drawing on the desired future conditions, goals, and strategies from the first-generation plan as well as key findings from the background assessment described above, the Planning Team updated the 100-year vision for the Southeast Landscape (Section 3) and developed ecological, social, and economic goals based on forest-related needs in the region, as well as strategies for each of these goals (Section 4). The combination of these desired future conditions, goals, and strategies provide all interested stakeholders with an overarching vision for the sustainable management of forest resources in the region.

The Planning Team used this vision along with the findings from the background assessment to establish a target goal of a 10% increase in forestland in the Southeast Landscape by the year 2025. This would amount to an increase of approximately 72,500 acres of additional forestland for a total of 797,625 acres of forestland in the Southeast Landscape. The distribution of these acres by Ecological Classification System Subsection may be found in Section 5. The Strategic Policy Framework established in Part 2 is meant to provide a guide for stakeholders during the selection of specific restoration areas.

Part 3: Operationalizing the Plan

In addition to developing an overarching vision for the forest landscape, the Planning Team chose to develop a 10-Year Work Plan – a series of specific objectives and action items based on the desired future conditions, goals, and strategies established in the Strategic Policy Framework. The Committee will coordinate implementation of these objectives and action items over the coming decade via development of Annual Work Programs. This 10-Year Work Plan and the Annual Work Programs comprise the main components of the Committee's proposed focused methodology for enhancing the coordination and implementation of this Plan (Section 6). The Committee will also be responsible for coordinating monitoring efforts, discussed in Section 7. The Committee will review progress on an annual basis made towards the implementation of this Plan and report their findings to the MFRC. These efforts should then become part of a larger state-wide monitoring and reporting effort developed by the DNR, as required by the SFRA, and supported by the other MFRC regional landscape committees in cooperation with partnering natural resources agencies.

Section 8 contains recommendations from the Committee to other agencies and organizations, based on the results of the planning process. An overarching recommendation is to encourage all organizations, agencies, landowners, and citizens, to use this Plan and the corresponding data in as many ways as possible. As a regional level plan, it is intended to provide broad context on how forest resources can be managed sustainably. Readers should note that this Plan does not list all current and past efforts by partner organizations; however, the Committee recognizes these efforts and sees the recommendations set forth within this Plan as opportunities for augmentation of and synergy with previous and ongoing efforts.

Another recommendation for users of this Plan is to follow the example set by the Committee with the development of the 10-Year Work Plan (Section 6). Recognizing the limitation of their own resources and capacity, the Committee envisions partner organizations creating their own work plans based on the Strategic Policy Framework, comprised of specific objectives that those partners can attain within the coming decade based on their organizational visions, goals, and resources. By leading coordination efforts in this way, the Committee envisions greater success in the implementation of this Plan. Diverse collaboration of resources and participation in the implementation of this Plan among regional partners will help ensure that these landscape-wide goals and strategies are met to the fullest extent possible.

This Plan is available online at: http://mn.gov/frc/initiatives_llm_committees_southeast.html

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Part 1
Purpose and Context: Where have we been and where are we today?

Section 1
Introduction

A. Sustainable Forest Resources Act

The Minnesota State Legislature enacted the Sustainable Forest Resources Act (Minn. Statues, Chapter 89A) in 1995, which established the Minnesota Forest Resource Council (MFRC) and formalized the state's policy to:

- Pursue the sustainable management, use, and protection of the state's forest resources to achieve the state's economic, environmental, and social goals;
- Encourage cooperation and collaboration between public and private sectors in the management of the state's forest resources;
- Recognize and consider forest resource issues, concerns, and impacts at the site and landscape levels;
- Recognize the broad array of perspectives regarding the management, use, and protection of the state's forest resources and establish processes and mechanisms that seek and incorporate these perspectives in the planning and management of the state's forest resources.

John Carlson

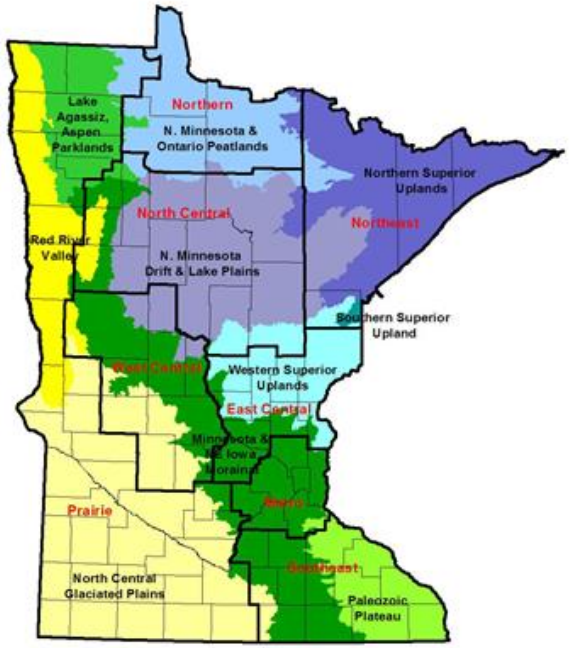
The purpose of the MFRC is to develop recommendations to the Governor and to federal, state, county and local governments with respect to policies that result in sustainable management of forests in the state. The policies must:

- Acknowledge the interactions of complex sustainable forest resources, multiple ownership patterns, and local to international economic forces;
- Give equal consideration to the long-term economic, ecological, and social needs and limits of the state's resources;
- Foster productivity of the state's forests to provide a diversity of sustainable benefits at site and landscape levels;
- Enhance the ability of the state's forest resources to provide future benefits and services;
- Foster no net loss of forest land;
- Encourage appropriate mixes of forest cover types and age classes within landscapes to promote biological diversity and viable forest-dependent fish and wildlife habitats;
- Encourage collaboration and coordination with multiple constituencies in planning and managing the state's forest resources;
- Address the environmental impacts and implement mitigations as recommended in the *Generic Environmental Impact Statement on Timber Harvesting and Forest Management*.

B. MFRC Landscape Program

The Sustainable Forest Resources Act (SFRA) provided authorization for the establishment of regional landscape committees to foster landscape-based forest resource planning and coordination. This legislation defined landscape-level planning as *"long-term or broad based efforts that may require extensive analysis or planning over large areas that may involve or require extensive coordination across all ownerships."* It charges regional committees to: 1) include representative interests, 2) serve as a forum to discuss issues, 3) identify and implement an open and public process whereby landscape-level strategic planning can occur, 4) identify sustainable forest resource goals for the landscape and strategies to achieve those goals, and 5) provide regional perspectives on forest sustainability to the Council.

The MFRC established the Landscape Program in June 1997 to organize and support the regional landscape committees. Following direction from the SFRA, the MFRC Landscape Program established regional committees to solicit the input of diverse forest resource interests within particular forested "landscapes". These landscapes are based on broadly defined ecological units, yet recognize existing political and administrative boundaries for delineation. The state has been divided into eight Landscapes as shown in the figure to the right. These regional committees provide an opportunity to involve private citizens, forestry professionals, and members of various interest groups in developing and implementing landscape-level plans that promote forest sustainability.



The MFRC Landscape Program provides an ongoing means of addressing regional issues through local partnerships that help to develop and accomplish citizen-identified short-term and long-term sustainable forest management goals and projects for the broader landscape region by bridging land ownership and forest types.

Find more about Minnesota's forested Landscapes, the process of landscape-level forest management, and the regional committees here:
http://mn.gov/frc/initiatives_llm.html.

C. Southeast Landscape Region

Geopolitical Context

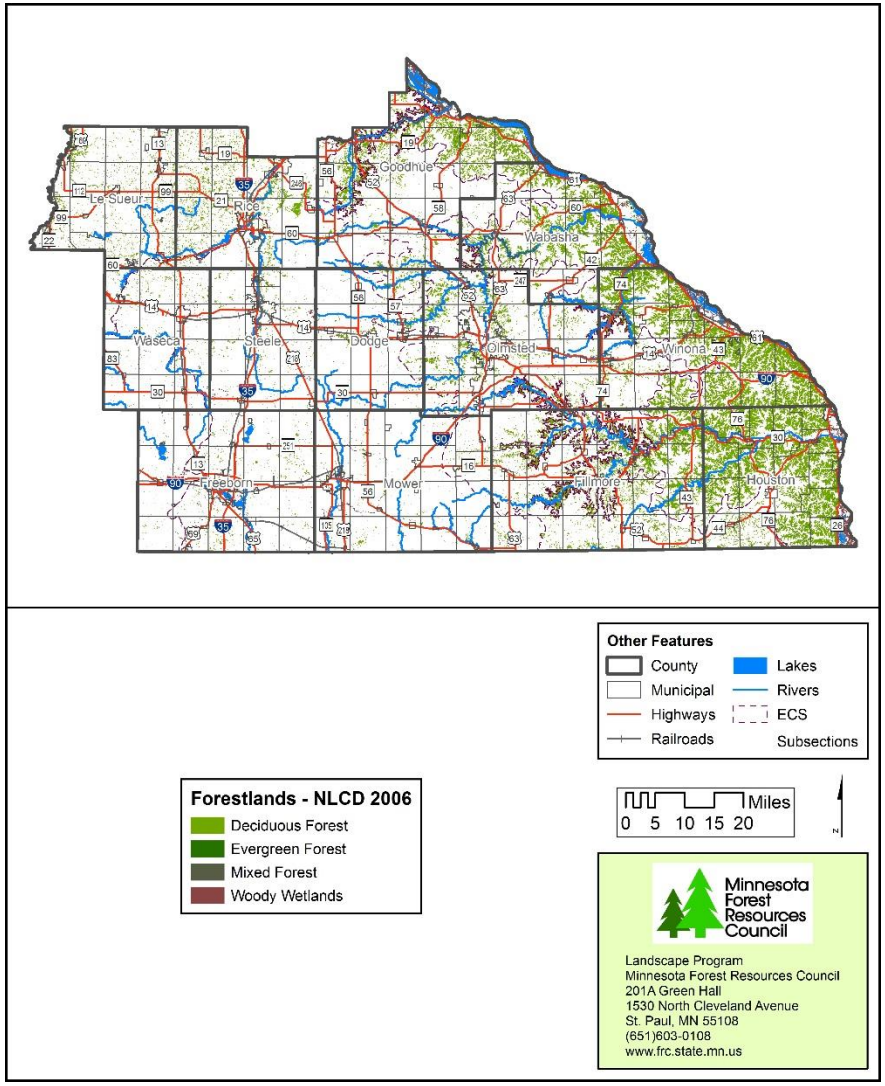
The Minnesota Forest Resources Council defines the Southeast Landscape as the thirteen most southeastern Minnesota counties; Dodge, Fillmore, Freeborn, Goodhue, Houston, Le Sueur, Mower, Olmsted, Rice, Steele, Wabasha, Waseca, Winona. The landscape contains nearly 5 million total acres of land and water.

Land Ownership and Management

The vast majority of land in the Southeast Landscape is privately owned – over 96% (2007 GAP Land Ownership data). According to 2012 Forest Inventory Analysis (FIA) data maintained by the U.S. Forest Service, approximately 86% of all forest land in the region is privately owned. The majority of the public forest land is owned by State (10.9%) government agencies, with only a small percentage owned by Federal (2.3%) or local (0.8%) government. With few exceptions, the land owning entity also manages the land in this region.

Generalized Land Cover

Historically, the Southeast Landscape was dominated mainly by upland grasses (prairie) and oak barrens (savannah), intermixed with patches of upland shrub and lowland vegetation. Upland forests covered the eastern portion and the northwest corner of the Landscape where the Blufflands and Big Woods Subsections are found, respectively. Today, agriculture is the dominant land cover type, encompassing over 2.7 million acres (2006 National Land Cover data) – over half of the landscape. Much of the upland grass/oak barrens, lowland vegetation, and upland forest within the Big Woods Subsection have been converted to agriculture. Residential development is concentrated around a handful of urban areas, the largest of which is the city of Rochester in Olmsted County. The majority of the remaining upland forest can be found in the Blufflands Subsection where the cliff-dominated topography has discouraged agricultural and residential development over the decades (see map to right).



Ecological Context

The Southeast Landscape can be further described using the Ecological Classification System (ECS), a hierarchical mapping system that defines regions that have similar ecological characteristics such as geology, vegetation, and soils into progressively smaller units of area. The Southeast Landscape intersects two ecological Provinces – the highest division of the ECS hierarchy found within Minnesota – the Eastern Broadleaf Forest Province and the Prairie Parkland Province. These Provinces are divided into Sections, three of which intersect

with the Southeast Landscape: the Minnesota & Northeast Iowa Morainal, Paleozoic Plateau, and North Central Glaciated Plains Subsections. The next two levels of the ECS hierarchy are Subsection and Land Type Association; there are five Subsections and 34 Land Type Associations contained by or intersecting the Southeast Landscape.

D. Southeast Regional Landscape Committee

The SFRA requires the regional committees fulfill and/or address many functions and activities in landscape planning and coordination. The following summarizes these functions:

- Include representative interests in a particular region that are committed to and involved in landscape planning and coordination activities.
- Serve as a forum for landowners, managers, and representative interests to discuss landscape forest resource issues.
- Identify and implement an open and public process whereby landscape-based strategic planning of forest resources can occur.
- Integrate its report with existing public and private landscape planning efforts in the region.
- Identify and facilitate opportunities for public participation in existing landscape planning efforts in this region.
- Identify sustainable forest resource goals for the landscape and strategies to achieve those goals.
- Provide a regional perspective to the council with respect to council activities.
- Facilitate landscape coordination between existing regional landscape planning efforts of public and private land managers.

The MFRC Landscape Program established landscape committees on a regional basis to implement these state policies at the landscape-level throughout the state. The Committee was convened in July of 2002 during the process of producing the first generation of the Southeast Landscape plan, described below.

E. Planning Process Overview

Landscape planning is a voluntary, consensus-based approach that brings together people who have an interest in the long-term health and vitality of a particular region. It is a process that helps landowners and resource managers better understand how an individual property, site, or area fits into the larger region or landscape.

First and Second Generation Landscape Plans

The planning process for the first Southeast Landscape plan began in 2001 as a collaboration of the MFRC and the University of Minnesota's Experiment in Rural Cooperation. During this time, an assessment of current conditions and trends in southeast Minnesota, as well as an inventory of existing landscape plans, was performed. In 2002, 30 natural resources organizations consisting of local governing units, non-profit entities, state and federal agencies, the University of Minnesota, local businesses, and landowners convened to identify priorities for the forested landscape to include in the plan. The first generation landscape plan was approved by the MFRC in 2003.

While the SFRA did not establish a process for maintaining or updating the landscape plans, over time regional committees began to recognize that the first generation of plans did not address some significant issues they were facing in their coordination and implementation efforts. At meetings over the past few years, the Committee identified issues and concerns that were either not addressed or not addressed in enough depth in the original plan. Some of the topics included invasive species, water quality, and climate change. In response, the Committee requested that the Council authorize the revision of the 2003 Southeast Landscape Plan. At their January 22, 2014 meeting, the Council directed the Committee to prepare this second generation Plan.

General Steps in the Plan Revision Process

One of the early steps in the plan revision process was to revise the survey used during the creation of the first generation plan to collect input from key stakeholders in the region. The survey was distributed in July 2013, once again to key stakeholders in natural resource professions and government positions. Further input was generated during a follow-up focus group session in September 2013; attendees included a subset of survey respondents as well as private landowners from the region.

Additionally, from July 2013 through February 2014, MFRC staff worked with the Committee to prepare a detailed assessment of landscape conditions and resource trends in the 13-county Southeast Landscape, as well as an inventory of key issues and themes from current DNR resource plans for the region. The results of these inputs and assessments are discussed in detail in Section 2 of this Plan.

In November 2013, a Planning Team was formed to develop the draft Plan document. The Planning Team consisted of Committee members and support by MFRC staff. The Team reviewed and updated the desired future conditions for the region from the first generation plan – long range statements which describe preferred conditions for the future landscape. The desired future conditions in this Plan describe a 100-year vision for forest resources in the region (Section 3). Drawing on the goals and strategies from the first generation plan as well as key findings from the background assessment process described above, the Planning Team developed ecological, social, and economic goals for the Southeast Landscape based on forest-related needs in the region, as well as strategies for each of these goals (Section 4). The combination of desired future conditions, goals, and strategies provide all interested stakeholders with an overall vision for the sustainable management of forest resources in the region.

In addition, the Planning Team chose to develop a series of specific objectives and action items based on the desired future conditions, goals, and strategies, of which the Committee will coordinate implementation over the coming decade via development of Annual Work Programs. By leading coordination efforts, the Committee envisions greater success in the implementation of this Plan. These specific objectives, action items, and Annual Work Programs comprise the main components of the Committee's proposed focused methodology for enhancing the coordination and implementation of this Plan (Section 6).

Between January and May 2014 the Team met several times via conference call or in-person meetings to develop a working draft of the Plan. The draft Plan was sent out to the Committee for feedback in July 2014. Committee feedback was incorporated and the revised draft was made available for a 30-day public comment period. After consideration of public input, the Plan was presented to the Council for approval. The Minnesota Forest Resources Council reviewed and approved this Plan on November 12th, 2014.

Section 2
Supporting Information

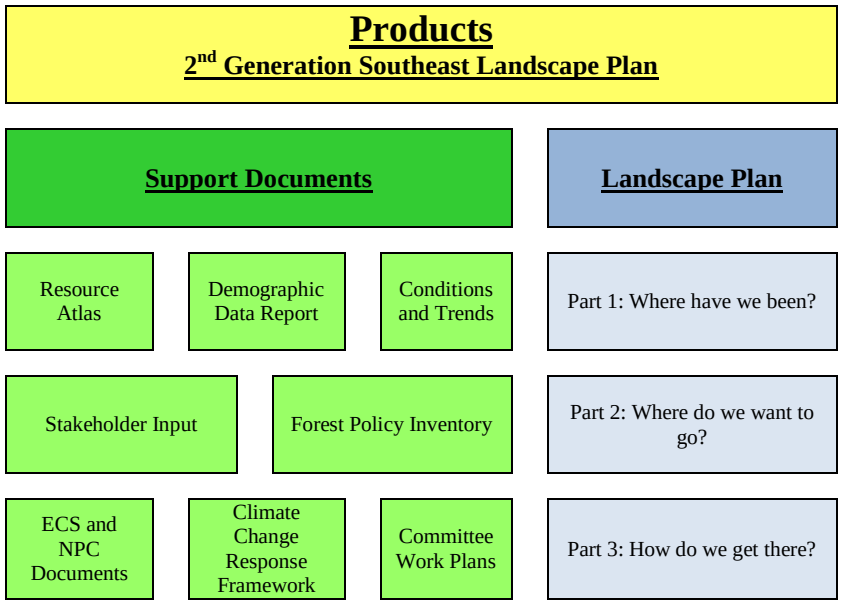
In order to develop well-informed goals and strategies for southeast Minnesota's forested landscape, six technical background documents were prepared during the year preceding the revision of this Plan to assess the current resources, needs, and key issues related to forests in the Southeast Landscape. These reports gathered currently available data on the ecological landscape and socio-economic data for the region, guidance from other resource management plans, and insights from key stakeholders in the region.

A. Overview

The supporting technical documents prepared to support the development of this Plan were as follows:

- Resource Atlas
- Conditions and Trends Report
- Demographic Data Report
- Forest Policy Inventory
- Key Stakeholder Survey Report
- Key Stakeholder Focus Groups Report

Key findings from these reports informed creation of the DFCs, goals, strategies, objectives, and action items that are discussed in Parts 2 and 3 of this Plan. The diagram to the right illustrates the connection between the background reports and the components in the Plan. Other sources of language and information for this Plan included the Sustainable Forest Resources Act, the organizational vision and goals of the MFRC, landscape plans from other regions, and the 2003 Southeast Landscape plan – the first generation plan for the region.



Descriptions of each technical support document as well as their methods and key findings are summarized here. For further information, as well as more detailed descriptions of references and data sources, all six reports are available in their entirety online as appendices to this Plan at: http://mn.gov/frc/initiatives_llm_committees_southeast.html.

B. Resource Atlas

The Southeast Landscape Resource Atlas was developed to provide the Planning Team with a better understanding of the natural and cultural resource base in the region as they developed this Plan. This in-depth series of inventory maps and tables was developed by MFRC staff to display the best available data from multiple agencies. The Atlas contains 54 maps and their associated tables. Many of these maps and tables were included in the development of the Conditions and Trends report and Demographic Data report (described below). All of these maps and corresponding tables can be viewed on the MFRC website. Additional datasets will be posted to address new natural resources issues as they arise. Readers are encouraged to check the website for the most recent information.

Maps included in the Resource Atlas:

1. Political Boundaries
2. Land Ownership (1976-2007)
3. Land Management (1976-2007)
4. Proclamation Areas
5. Quaternary Geology
6. Landforms
7. Topography
8. Shaded Relief
9. Karst Features
10. Major Watersheds
11. Soils – Farmland Class
12. Soils – Drainage Class
13. Soils – Hydric Rating
14. ECS Provinces, Sections, and Subsections
15. ECS Sections, Subsections, and Land Type Associations
16. Pre-settlement Land Cover (1895)
17. Land Cover (1992)
18. Land Cover (2001)
19. Land Cover (2006)
20. Pre-settlement Land Cover (1895) – Reclassified
21. Land Cover (1992) – Reclassified
22. Land Cover (2001) – Reclassified
23. Land Cover (2006) – Reclassified
24. MBS Native Plant Communities
25. MBS Biodiversity Significance
26. Change in Relative Abundance of Aspen by ECS Land Type
27. Change in Relative Abundance of Red Oak by ECS Land Type
28. High Conservation Value Forest Candidates

29. School Trust Lands (map under construction)
30. Forest Stewardship Plans
31. Watershed Health Score
32. Impaired Waters
33. Designated Infested Waters
34. Trout Stream Designations
35. Deer Permit Areas
36. Important Bird Areas
37. Terrestrial Invasive Species Observations – Noxious Weeds Control List
38. Terrestrial Invasive Species Observations – Noxious Weeds Eradicate List
39. Terrestrial Invasive Species Observations – Noxious Weeds Restricted List
40. Emerald Ash Borer Introduction Risk
41. Gypsy Moth Trapping Results (2008)
42. Gypsy Moth Trapping Results (2009)
43. Gypsy Moth Trapping Results (2013)
44. 2010 US Census Population Density
45. Trails
46. Sawmills
47. Mining Activity and Silica Sand Potential
48. Aggregate Resource Mapping Program – Crushed Stone
49. Aggregate Resource Mapping Program – Sand & Gravel
50. Annual Average Daily Traffic
51. Annual Average Daily Vehicle Miles Traveled
52. Heavy Commercial Annual Average Daily Traffic
53. Heavy Commercial Annual Average Daily Vehicle Miles Traveled
54. Road Functional Classes

C. Conditions and Trends Report

Included within the MFRC's landscape planning process is a directive to assess current conditions and trends within the landscape that impact natural resources. The purpose of conducting this landscape assessment is to provide a common understanding of ecological and socioeconomic conditions in order to further planning and coordination efforts among multiple landowners and interests. This assessment provides a scientific base for the goal-setting and collaborative decision-making in the landscape plan development process.

The Conditions and Trends Report provides as current and accurate a picture of the thirteen-county Southeast Minnesota Landscape as possible given the limitations of available information and resources. It also points to areas where more information is needed, and where more specific assessments are needed to resolve the primary issue of sustainability in the forest landscape.

To guide the MFRC's regional committees as they carry out landscape-level planning and coordination, the MFRC established four broad goals that describe overarching strategies for sustaining Minnesota's forests. The MFRC used the Generic Environmental Impact Statement on Timber Harvesting and Forest Management (GEIS) in Minnesota to develop these goals. This updated Conditions and Trends report is structured around these four goals. The goals are stated below, along with key findings pertaining to each goal based on the available data collected for the report.

Trends indicate that despite the loss of hundreds of thousands of forested acres since European settlement, quantity of forest lands have stabilized in recent years; and despite over half of the region now consisting of agriculture, large stretches of the forestland in the Blufflands remains intact today, though forest quality is threatened in places. Threats to forest health include habitat loss and growing pressure from invasive species. Land use change in the region is creating concern over water quality and quantity. Biodiversity is highly concentrated in this region, with many species found nowhere else in the state. Much of the forestland in the Southeast Landscape is in private ownership, indicating the importance of partnering with the private landowner community in this region. Increasing population in parts of the region poses both a threat to forest cover as well as opportunities for the forest-based leisure and tourism industry and for tapping into local lumber markets in quickly developing areas. Other opportunities to capitalize on the many ecosystem services provided by the region's forests may exist; thorough evaluation of the potential economic benefits of these services is needed.

MFRC Goal 1: Forestland Cover. Land area covered by forests within a region's landscape will be the same or larger.

- **Historic loss of upland forests.** The region, which covers nearly 5 million acres, has lost approximately one-third – over 330,000 acres – of "upland forests" to agriculture and development since European settlement. The most heavily impacted counties include Le Sueur County, Rice County, Wabasha County, Houston County, and parts of Olmsted County (MN DNR Data Deli; Marschner 1974; NLCD 2006)
- **Forestland has been stable or slightly increasing over the last decade.** Differences in national forestland datasets present difficulties in drawing conclusions about forestland cover change during the implementation period of the first plan, 2003-2013. The 2001 and 2011 National Land Cover Datasets indicates relative stability of upland forest/woody wetland cover from 2001 (729,157 acres) to 2011 (725,125 acres), while USDA-Forest Service Forest Inventory and Analysis data indicates lower estimates for forest land (as a land use, rather than cover) in 2003 (571,784 acres) and increases over the decade (730,242 acres in 2013). However, both datasets indicate similar forest land area for the region in modern time – approximately 725,000 acres – and little to no net loss of total forest acres. This provides a baseline for forested acre goal setting for the next decade. (NLCD 2001; NLCD 2011; FIA 2003-2013)
- **The Blufflands Subsection contains the most forest land cover in the region.** Of the three most predominant Ecological Subsections in the region, the Blufflands contains the most forest/woody wetland cover (39.9%), and the least cultivated crop cover (18.5%) for the area within the Southeast Landscape. The Rochester Plateau/Southeast Landscape intersection contains approximately 8.8% forest/woody wetland and 53.4% cultivated crop cover, and the Oak Savanna/Southeast Landscape intersection contains 3.5% forest/woody wetland cover and 78.1% cultivated crop cover. (NLCD 2006)
- **Forested acres are greatest in Houston County and least in Freeborn County.** According to USFS FIA estimates, Houston County contains 21.6% of the Southeast Landscape's approximately 724,000 forested acres, followed by Winona County with 20.8% and Fillmore County with 13.2%. Mower, Steele, and Freeborn counties contain a combined 10.8% of the forested acres in the Southeast Landscape. (FIA 2012)

- **Agriculture remains the prevailing land cover.** Despite reported decreases in agricultural land and increases in upland grass land cover, agriculture remains the dominant land use in southeast Minnesota, comprising over 54% of the total landscape according to the 2006 National Land Cover Dataset (NLCD 2006). It should be noted that high agricultural commodity prices in recent years likely have encouraged private landowners to convert their woodlands into cropland.
- **Farmland decreased, farm operations acreage remained constant.** Land defined as "ag land," "crop land," and pasture only" decreased between 1997 and 2007, but overall acres operated as part of a farm (including land not in production) remained relatively consistent with a slight increase (USDA NASS 2014)
- **Land development continues to rise.** Developed acres increased by over 230% between 1992 and 2006 (approximately 111,000 acres to just over 367,000). It should be noted that land development rates vary by county. (GAP 1992; NLCD 2006)

MFRC Goal 2: Land Ownership. Forests within a region's landscape will be in a variety of ownerships, serving both public and private interests.

- **Private ownership remains the vast majority ownership pattern.** Over 96% of land and over 86% of forestland (over 85% of timberland) cover in the Southeast Landscape is in private ownership. Between 1990 and 2012, public timberland increased by 3,843 acres and private timberland increased by 75,088 acres. The ratio of publically- to privately-owned timberland remained relatively stable between 1990 and 2012 with only a slight overall increase in the ratio of private to public land. (FIA 1990-2012)
- **Public Land ownership is minimal.** Most public land is scattered along the Mississippi River. The Whitewater Wildlife Management Area (21,050 acres) comprises a large portion of this public land. (GAP 2008)
- **Most of the Richard J. Dorer Memorial Hardwood Forest is privately owned.** Nearly all of the Richard J. Dorer forest is within the MFRC Southeast Landscape; of the area within the Southeast Landscape, over 93% of the land is privately owned. (GAP 2008; MN DNR 2009)
- **Total federally-owned timberland decreased between 1990 and 2012**. Inconsistent with the general trend of forestland in southeast Minnesota between 1990 and 2012, which according to FIA data experienced an overall increase for private, state and local, and total timberland acres, federally-owned timberland decreased by 15.8% – about 3,000 acres – during that time. (FIA 1990-2012)
- **Forest Stewardship Plan coverage is limited in IFRAs.** Approximately 5% of the Important Forest Resource Areas (IFRAs) acreage identified by the MN DNR in the Southeast Landscape is currently covered by a Forest Stewardship Plan. This exceeds the state-wide coverage by approximately 0.8%. (Note that not all IFRAs are currently forested; see note on map on p. 6-10) (SAP 2006)
- **Farm operation falls mainly to full or part owners.** The majority of farm operations are operated by full owners, but the majority of farm acreage is operated by part owners (those who both own land and lease land). Tenant landowners (those who only lease land) make up less than 1/10 of the operation/acreage control in the region. (USDA NASS 2014)

MFRC Goal 3: Healthy Forests. Within forested landscapes, healthy, resilient, and functioning ecosystems will be maintained within appropriate mixes of forest cover types and age classes to promote timber production, biological diversity, and viable forest-dependent fish and wildlife habitats.

Forest Productivity

- **Large-diameter oak/hickory forests comprised the most timberland acreage over time.** Oak/hickory forest made up over half of the timberland in the Southeast Landscape between 1990 and 2012, and a large component of this was large-diameter trees (FIA 1990-2012).
- **There are nearly 900 million cubic feet of growing stock on timberland in the Southeast Landscape.** The greatest amount of growth and mortality was among "other eastern soft hardwoods." The greatest amount of removal was for cottonwood and aspen, followed closely by select red oaks and ash (FIA 2012).
- **Tree species abundance has changed since pre-settlement.** Based on an analysis completed by John Almendinger that compared 1990 FIA data and Marschner's pre-settlement data from the Public Land Survey, between the late 1800's and 1990 disturbance-loving species such as box-elder (*Acer negundo*) and eastern red cedar (*Juniperus virginiana*) increased greatly, while oak species such as black oak (*Quercus nigra*), bur oak (*Quercus macrocarpa*), and jack oak (northern pin oak - *Quercus ellipsoidalis*) declined in numbers. (Almendinger 2000)
- **There are over 3.1 billion board feet of sawtimber (International ¼-inch rule) on timberland in the Southeast Landscape.** "Select red oaks" had the greatest net volume, but other eastern soft hardwoods experienced the greatest net growth. (FIA 2012)

Biodiversity

- **Over half of Minnesota's plant species are found in the Southeast Landscape.** The region contains 1,376 of Minnesota's 2,250 species of plants. 1179 of these plants are native, 193 are introduced, four have unknown status; 75 of these plant species are found nowhere else in the state, and 11 are found nowhere else in the state beyond Houston County. One plant species – the dwarf trout lily (*Erythronium propullans*) is endemic to small areas of a few counties in southeast Minnesota. (MNTaxa)
- **The Southeast Landscape contains significant vertebrate diversity.** At least 21 species of small (or incidental) mammals, 44 species of amphibians and reptiles, and 156 species of breeding birds are found in the region. (Cieminski and Stucker 2013; Hall 2013; MN DNR 2013 (1))
- **The Southeast Landscape contains 4 endangered, 5 threatened, and 27 special concern vertebrate species (excluding fish).** Over half of the forest-associated species of endangered, threatened, and special concern species in the state are found in this region. (MN DNR 2013 (2), (3))
- **The Blufflands Subsection contains the greatest number of Species of Greatest Conservation Need (SGCN) in the region.** The Blufflands contains 156 SGCN, the Rochester Plateau contains 94 SGCN, and the Oak Savanna contains 93 SGCN. (MN DNR 2006)
- **Areas of highest biodiversity significance are concentrated along riparian areas in the eastern half of the region. (**MN DNR 2013 (1))
- **Biodiversity significance is high in the region overall.** Of the area surveyed in the Southeast Landscape by the Minnesota Biological Survey, one-third of that area was classified as having "High" or "Outstanding" biodiversity significance, which amounts to 3.3% of the total land in the region. It is possible that more sites of biodiversity significance exist within non-surveyed areas. **(**MN DNR 2013 (1))
-

Invasive Species

- **Terrestrial invasive species are commonly observed.** The Southeast Landscape contains many unique terrestrial invasive species compared to the rest of the state, in part due to its many ports of entry for these species. The most frequently observed invasive terrestrial species on public land in the Southeast Landscape include reed canary grass, wild parsnip, and common buckthorn. Observations may differ on private land.(MN DNR 2013 (4); EDD MapS)
- **Emerald ash borer is present in Southeast Minnesota.** Quarantines have been placed on Houston and Winona Counties; risk of spread is highest to lumber vending and processing sites such as firewood dealers and sawmills, and to human-frequented areas such as campgrounds and urban areas. (MDA 2006; MDA 2011)
- **Over half of the counties in the region have evidence of gypsy moth invasion.** Eight of 13 counties in the region had evidence of gypsy moth invasion in 2013. Moth numbers increased dramatically in 2008 for reasons that are unclear in this dataset, and then decreased again in subsequent years, possibly due in part to a treatment implemented in 2009. (MDA 2008)
- **Aquatic invasive species (e.g., zebra mussel, Eurasian watermilfoil) are present in major waterways.** The Mississippi and Zumbro Rivers and lakes along the Cannon River have been designated as infested waters by the Minnesota Department of Natural Resources. (MN DNR 2013 (4))

Water Quality and Quantity

- **MPCA-monitored water pollutants show no trend or decreasing trend over time, except nitrate/nitrite pollutants**. All contaminants monitored by the Minnesota Pollution Control Agency (MPCA) (biochemical oxygen demand, total suspended solids, total phosphorus, nitrites/nitrates, un-ionized ammonia, fecal coliform) have generally stabilized in the region over time, except for nitrites/nitrates, which have increased over time in the majority of test sites (13 total test sites). (MPCA 2013 (2))
- **Karst geology in the region facilitates the movement of nitrogen pollution**. The karstic nature of the region's limestone facilitates rapid underground movement of nitrite/nitrate-enriched groundwater. Extensive cover of thick (greater than 50 feet), clay-rich, unconsolidated sediment on top of the bedrock karst is needed to ensure resistance to nitrite/nitrate contamination of groundwater. As only patchy cover occurs throughout most of the Rochester Plateau and Blufflands subsections, these two regions are particularly vulnerable to nitrite/nitrate infiltration. (Runkel et al. 2013)
- **Row cropping and nitrogen pollution are correlated.** While this relationship has been documented at various scales, in the Southeast Landscape the MPCA has examined this relationship in the context of 100 trout streams and found a strongly correlated positive relationship between percentage of corn/soy in an area and concentration of nitrates in trout streams. (Watkins et al. 2013)
- **Increased groundwater consumption and agricultural tiling seem to be leading to decreased groundwater base flow, increased runoff and stream flow.** Despite no trend in precipitation rates statewide between 1990 and 2007, base flow of rivers (the component of flow based primarily on groundwater discharge rather than precipitation and runoff) appears to have declined with the increase of groundwater and surface water consumption and agricultural tiling; groundwater consumption has nearly doubled since 1990. However, annual stream flow as a result of runoff (as opposed to base flow) seems to be increasing in the agricultural areas of southern Minnesota, due primarily to land use changes. (Streitz 2012; Lenhart and Niebert 2011)
- **Watershed health scores decrease in a westward direction across the region.** There are over 42,000 acres of impaired lakes and 1500 miles of impaired streams in the Southeast Landscape. (MN DNR WHAF 2011; MPCA 2013)

- **The Southeast Landscape remains an important area for trout stream protection.** In southeast Minnesota, there are over 800 miles of designated trout streams and over 1000 miles of protected tributaries to trout streams located in Goodhue, Wabasha, Winona, Houston, and Fillmore Counties, and a small part of Olmsted County (MN DNR, Div. of Fisheries 2009).

MFRC Goal 4: Economic and Social Values. Forests within a region's landscape will be providing a full range of products, services, and values, including timber products, wildlife, and tourism that are major contributors to economic stability, environmental quality, social satisfaction, and community well-being.

Recreation

- **Citizens of southern Minnesota prefer walking/hiking, boating, and swimming** as their top three outdoor activities. (Kelly 2005)
- **Leisure and hospitality is a nearly $1 billion industry** in the 13-county Southeast Landscape, providing over 20,000 jobs. (MN DoR/DEED 2014)
- **Whitewater State Park is an important Minnesota tourist destination.** In 2010, Whitewater State Park was the most popular tourist attraction (of facilities reporting to Explore Minnesota) in the 38-county South Region of Minnesota with over 250,000 visitors that year. (Explore Minnesota 2012)
- **Survey results indicate that trout angling in Southeast Minnesota was most popular among locals and Twin Cities residents.** In 2005, results of a creel survey indicated that trout anglers in southeast Minnesota caught over 214,000 trout in nearly 191,000 angling-hours. Over 90% of anglers interviewed were from Minnesota. Over 50% of interviewees were from the 11-county southeast survey area, while over 30% were from the Twin Cities metro. (Snook and Dieterman 2006)
- **Trout angling has economic impact in the Driftless Area.** Resident trout anglers of the Driftless Area may spend over $200 per outing, while non-resident anglers may spend nearly double that amount per outing, according to 2008 estimates. (North Star Economics and Trout Unlimited 2008)
- **Deer population and harvest –** Population model estimates indicates relatively stable deer populations in the region between 2008 and 2013, having decreased somewhat in designated permit areas that had the highest deer densities in 2008. Deer harvest numbers have dropped slightly since 2003, potentially due to changes in hunting regulations. (Grund 2013; MN DNR 2003, 2013)
- **Landowner perceptions of deer population and impacts**- A 2013 survey of 2,312 landowners (with 40 acres or more) in Goodhue, Wabasha, Houston, and Winona counties indicated that the largest percentage of both hunting and non-hunting landowners felt that deer populations were "about right" around their property; however, landowners who do not hunt were more likely to report that numbers were "too high" than those who do hunt (45% of non-hunters compared to 23% of hunters). Respondents estimated a total of $3.5 million worth of damage to crops (in large part, corn) in 2011 due to deer. (Pradhananga, Davenport, and Cornicelli 2013).

Economics

- **In 2013 there were 323 forest-related payroll jobs in the Southeast Landscape.** Over the last decade, forest-related payroll jobs have ranged from 271 (2010) to 604 (2005). (Deckard 2013)
- **8,425 cord equivalents of timber were harvested in the Southeast Landscape in 2011** (Note: firewood/fuelwood is not directly included in harvest numbers). Comparatively, in 2009 over 21,000 cord equivalents were processed in the region (including sawmill slab firewood/fuelwood), suggesting that the region imports timber from other areas for processing. (Deckard 2009; Deckard 2011).
- **Minnesota had over 40,000 jobs** and $9.7 billion in direct economic impact related to forestry, logging, and primary and secondary forest products manufacturing in 2008. (Deckard and Skurla 2011)

- **There were at least 26 saw mills in the Southeast Landscape in 2007.** (MDA 2007)
- **In 2010, Minnesota ranked 8th among the 50 states in terms of gross state product per capita for combined pulp and paper and wood products.** (Deckard 2014)
- **In 2012, the state had nearly 1500 forest industry-related facilities** including four pulp and paper mills. (Deckard 2014)
- **Farmland, tillable land, and timberland prices have increased dramatically in the last two decades.** Farmland price per acre has increased 10-fold in Houston County in the last 20 years, and 4.5 to 9 fold in all other counties in the region during that time period. Tillable land increased 4.5 to 7.5 fold across the region during the 20-year period, with Fillmore County seeing the largest percent increase. Timberland was not documented in all counties over the 20-year period, but increased approximately 12 to 14 fold for the counties of Fillmore, Wabasha, and Houston during that time, and only 4 to 5 fold in Goodhue and Winona Counties. Farmland and Tillable land was highest in Mower County in 2013 and Timberland was highest in Olmsted County in 2013. (Taff 2014)

Mining

- **There are five active dimension stone and silica sand mines in the Southeast Landscape,** and many crushed stone and sand/gravel quarries throughout the region. (MN DNR, Lands and Minerals 2014; MN GS 2014)
- **As of 2013, no new hydraulic fracturing sand mines were proposed for the region**. However, silica sand mining potential does exist within the region. (Arends 2014)

Transportation

- **Nearly 12 million vehicles travel approximately 22.5 million miles along 7800 miles of roads in the Southeast Landscape daily.** Approximately 1 in 25 vehicles are considered "heavy commercial" and make up 8.8% of daily vehicle miles travelled in the region. Increased commuting distances have the potential to disperse the region's population residing in the rural forested portions of the region. (MnDOT 2008-2012).
- **The Southeast Landscape contains a variety of diverse, multi-purpose trails.** Snowmobile trails are the most popular trail-type in the Southeast Landscape, following by hiking. All-terrain vehicle trails are less common in the southeast than the rest of the state. (MN DNR, Div. of Parks and Trails 2013)

D. Demographic Data Report

As a supplement to the Conditions and Trends report (discussed above), the Demographic Data report was prepared to summarize the best available data on regional population and employment trends and projections in the Southeast Landscape region. Data was collected from the U.S. Census Bureau, U.S. Bureau of Labor Statistics, Minnesota Department of Employment and Economic Development, American Community Survey, and Minnesota State Demographic Center. Key findings from this data assessment are included below.

- **The region has experienced inconsistent population growth.** The population of the Southeast Landscape has grown at varying rates over the past 4+ decades, but has experienced positive growth overall. However, growth has not been positive across all 13 counties: Freeborn County has experienced steady population decline since 1970, Fillmore County has experienced erratic growth but overall decline since 1970, Houston County has experienced decline since 2000, and Le Sueur, Steele, and Wabasha have experienced recent

decline since the 2010 U.S. Census, according to post-Census estimates. Mower County had been in decline between 1970 and 1990, but has been increasing since that time, and Waseca County has fluctuated over the decades between positive and negative growth, but is currently growing. Olmsted, Rice, and Dodge counties have experienced the most rapid population growth in the region in recent years. (US CB 2012 (1))

- **Regional projected population growth is similar to Minnesota overall, but widely variable among counties.** Population by county is expected to change from -1.2% (Winona County) to 39.0% (Dodge County) between 2010 and 2045, with an overall increase of 19.0% in the Southeast Landscape during that time period; this percentage is calculated from a population of 541,523 in 2010 based on U.S. Census data and a population of 644,486 in 2045 based on MN State Demographic Center projections. (MN State Demographic Center 2014).
- **Olmsted, Rice, and Dodge counties exceed state-wide projections for household growth.** While region-wide household growth projections fall below the statewide average, these three counties are expected to outpace overall statewide household growth by 2040. Olmsted County is expected to exceed 50% household growth by that time. Where these new residents choose to live and the corresponding land use development patterns has the potential to significantly impact and alter the forest resources in the region. (Robertson 2013).
- **The region's population is aging.** Projections indicate that the 0-24 year-old age group will experience very limited growth in the Southeast Landscape between 2015 and 2035, while the 25-65 year-old age group will experience negative growth during that time. The 65+ year-old age group will experience the greatest growth: 43.1% between 2015 and 2025, and 21.7% between 2025 and 2035. Growth will slow to near halting for the 65+ year-old age group, however, between 2035 and 2045, while both the 0-24 and 25-64 year-old age groups will experience approximately 4% growth during that decade, according to projections. (MN State Demographic Center 2014)
- **Farmer age is increasing.** Average age is increasing among farmers in the region, falling between 53.7 and 57.4 in 2007. (USDA NASS 2014).
- **Overall racial diversity is limited; higher than average ethnic diversity exists in some counties.** Racial diversity is low across the Southeast Landscape; all counties have less diversity that the state-wide averages, with the exception of Olmsted County which is approximately on par with the state-wide averages. Ethnically, 6 of the 13 counties have higher Hispanic or Latino populations than the state-wide average. (US CB 2012 (2))
- **The region has lower income, but higher homeownership rates compared to Minnesota overall.** Median household income is lower (10 of 13 counties), but homeownership rate is higher (11 of 13 counties) in the Southeast Landscape compared to the state-wide averages. The median value of owner-occupied housing units is lower than the state-wide average in all counties except Rice County. (US CB 2012 (2))
- **Employment numbers indicate that the region is still recovering from the Great Recession (beginning 2009).** Six of 13 counties have experienced negative overall employment growth since 2003, though employment numbers did rise between 2011 and 2012 for 10 counties. Steele County is the only county in the region to have exceeded peak pre-Recession employment numbers by 2012. (US BLS 2003-2012)

- **Healthcare-related occupations dominate and will continue to rise.** The Healthcare and Social Assistance sector houses over one-quarter of the region's employees and provides over one-third of total wages; the Manufacturing sector is the next largest. Healthcare-related occupations are among those projected to experience the largest employment growth in the region by 2020, along with occupations in construction and the sciences. (Note: The MN DEED Southeast Planning Area includes Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona Counties) (MN DEED 2012)
- **The majority of counties in the region have a lower unemployment rate than the state-wide average.** Despite ongoing recovery from the Great Recession, many counties in the region retain a higher-than-average employment rate compared to the state as a whole (5.1%) as of July 2013. Olmsted County had the lowest unemployment rate in the region at that time (4.2%) and Le Sueur County had the highest (5.8%). (MN DEED 1990-2012)
- **Per capita income is lower than the state-wide average.** Counties in the southeast are below the average per capita income state-wide with the exception of Olmsted County, which exceeds the state-wide average by over $3500 per capita. (US CB 2007-2011 (3)).
- **2013 data indicates that wages fell below the state-wide average.** With the exception of Olmsted County, all Southeast Landscape counties had lower average weekly wages than the state-wide average in the first quarter of 2013. (US BLS 2013)
- **Wage growth varies by county.** Seven of 13 counties experienced greater wage growth in the last decade than the state-wide average with Mower County experiencing the highest rate of weekly wage growth during that time (over 35%). (US BLS 2003-2012).
- **The region has overall lower poverty rates than the state-wide average.** As of 2011, 9 of 13 counties in the region had lower poverty rates than Minnesota as a whole (11.8%); Dodge County had the lowest poverty level in the Southeast Landscape (7.4%) and Winona County had the highest (14.6%). All counties in the region had lower poverty rates than the United States overall (15.9%). (USCB 2011 (3))

E. Forest Policy Inventory

The purpose of the Forest Policy Inventory was to collect and organize the most recent forest management plans created by the Minnesota DNR and partners in the Southeast Landscape, and to identify common themes among the issues, visions, goals, and strategies they have developed for lands under their management or jurisdictional authority. The report contains two sections: 1) a summary of the forest policies expressed across the analyzed plans, organized by Issues, Visions, and Goals; 2) individual plan summaries that contain extracted plan language organized by these three categories, as well as specific management strategies and background information on the scope and planning process.

Thirteen DNR plans were analyzed for this report; three different plan types were included – Regional, Land Asset Management, and High Biodiversity Management Area plans:

Regional Natural Resource Management Plans

1. Blufflands/Rochester Plateau Subsection Forest Resource Management Plan (DRAFT) (2013)
2. Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife (2006)

3. Strategic Plan for Coldwater Resources Management in Southeast Minnesota: 2004-2015 (2003)

Land Asset Management Plans

4. Land Asset Management Plan for Lake City Forestry Area (2008)
5. Land Asset Management Plan for Rochester Forestry Area (2008)

High Biodiversity Management Area Plans

6. High Biodiversity Area Management Plan, Collischan Bottoms (Vermillion Bottoms and Lower Cannon River Area) (2002)
7. High Biodiversity Area Management Plan, Partridge Creek (2005)
8. High Biodiversity Area Management Plan, Pine-Hemingway Creek (2009)
9. High Biodiversity Area Management Plan, West Indian Creek (2002)
10. High Biodiversity Area Management Plan, Whitewater North Fork Area (2004)
11. High Biodiversity Area Management Plan, Whitewater Sand Savanna (2006)
12. High Biodiversity Area Management Plan, Whitewater South Fork (2006)
13. High Biodiversity Area Management Plan, Whitewater Upper Beaver Creek (2005)

These plans were qualitatively analyzed for common themes. Language that fit the definition categories of Issue, Vision, and Goal was extracted and summarized for all plans. The following are summary vision statements from the three plan types: Regional, Land Asset Management, and High Biodiversity Management Area. Bracketed numbers refer to the plan number, as listed above.

<u>Regional plans [1, 2, 3]:</u>

SFRMP:

- Increase timber productivity on state lands and determine a sustainable level of harvest; ensure a sustainable supply of "non-timber forest products"; adapt management to mimic natural disturbances and better reflect natural landscape patterns. [1]
- Address the impacts of disturbance factors such as insects, disease, herbivory, invasive species, and climate change. [1]
- Determine appropriate distribution of age groups, growth-stage, structure, composition, tree diversity necessary to support biodiversity, and forest health/productivity goals in light of truncated natural succession pathways. [1]
- Protect rare and important species and habitats; adapt management to enhance biodiversity and native plant communities.
- How do we manage forest vegetation to maintain forest communities of particular concern and balance the habitat needs of game and nongame species? [1]
- Manage forests at the watershed level, accounting for impact on wetlands and other aquatic resources; determine the appropriate width of the riparian management zone (RMZ)
- Effectively implement comprehensive resource management and limit habitat fragmentation in light of structural and agricultural development [1]
- Manage the limited public land base to achieve "landscape" level management and other desired results while upholding various state and federal statutes. [1]

- Protect cultural resources and visual quality during forest management [1]

Tomorrow's Habitat:

- Improve knowledge about species of greatest conservation need, stabilize and increase their populations, and enhance the public's appreciation and enjoyment of these species. [2]

Cold Water:

- Provide diverse angling opportunities, increase communication efforts with constituents and fisheries professionals, and provide for the protection, improvement, and restoration of cold water aquatic habitat and fish communities so that this unique resource is available for future generations. [3]

Land Asset Management plans [4, 5]:

- Achieve the optimum pattern of forest land ownership for the management of forest resources designed to best serve the needs of Minnesota's citizens while maximizing long-term resource and economic benefits through efficient resource management, land acquisition, exchange, sale, leasing, permit and other activities. [4, 5]

High Biodiversity Management Plans [6, 7, 8, 9, 10, 11, 12, 13]:

- Perpetuate, manage, regenerate, and enhance the native plant communities that support local biodiversity using processes that mimic the disturbances that helped to establish and maintain these communities. [6, 8, 9, 10, 11, 12, 13]
- Management of these sites should focus on the site as a whole and employ practices that perpetuate endangered, threatened, special concern, or otherwise rare species, and native plant communities while following the mandates of forestry or wildlife-administered lands. [7, 8, 10, 11, 12, 13]
- Meld the goals of biodiversity protection/enhancement [6, 8, 9, 10, 11, 12, 13], recreation [6, 8, 9, 10, 11, 12, 13] game and/or non-game wildlife management [6, 8, 9, 10, 11, 12, 13], timber management [6, 8, 9], understory species management [8, 9], and trout stream management [8, 9] into an adaptive management process.

Issues or challenges that were mentioned across the majority of these plans include recreation and cultural needs, biodiversity, rare species conservation and management, invasive species, development pressures, and wildlife management. Goals fell largely into four categories: 1) land management for timber and native plant communities, and other management-related goals; 2) protection, enhancement, and restoration of terrestrial and aquatic wildlife habitat, rare species, and biodiversity; 3) planning for and addressing disturbance; and 4) social factors. Timber/native plant community/other forest management goals and wildlife habitat goals were the most prevalent across plans, while goals that were specific to disturbance, development, and social factors were somewhat less common despite being commonly mentioned as issues/challenges in most plans. This suggests that timber, wildlife, and native plant community management is the medium through which the DNR strives to influence these broad, key issues. However, it should also be noted that while social goals such as research, recreation, and education needs were not common in the High Biodiversity Management Area plans – which were highly focused and made up the majority of plans in this analysis – they were present in the Regional plans, which had a much broader scope.

Specific strategies for each plan were not summarized across plans, but are included in the individual plan summaries that may be found in the second part of the report. These individual plan summaries also contain background information on the scope and planning process of each plan and information for locating the plans.

F. Key Stakeholder Survey Report

Background and Methods

In 2001 the Experiment in Rural Cooperation, a partnership administered through the University of Minnesota, implemented a survey of key stakeholders in southeast Minnesota to gather input on the importance of various forestry issues within the region. The information that was gathered was used, in part, to assist in the development of the first generation plan, the Forest Resource Management for Minnesota's Southeast Landscape.

In 2013 the Minnesota Forest Resources Council and the Committee chose to implement the survey again in order to collect feedback that would guide plan revision. The survey was intended to be a non-scientific opinion-gathering tool aimed at a select audience of key stakeholders in southeast Minnesota from a variety of disciplines, including agency staff and service providers, legislators, county commissioners, Committee members, and other interested persons associated with the Committee. Minor revisions were made to the question content and format of the original survey, leaving many of the original statements intact or abbreviated, but reviewing some statements that were no longer relevant. Open-ended questions were added to capture new issues and to gauge the positive and negative results of forest management over approximately the past decade. Whereas the 2001 survey was implemented by mail, the 2013 survey was largely implemented online.

Key Issues

The survey contained 59 statements that were grouped by theme into unlabeled multi-part questions. Participants were asked to rate the importance of each statement on a five-point scale from "not important" to "very important." Themes that received the overall highest ratings included biodiversity and soil/water quality, while wildlife and public land management themes received the lowest average ratings, in terms of importance.

However, categories sometimes contained both highly important and less important statements, as viewed by respondents. For example, in a question about invasive species management control of buckthorn and garlic mustard were ranked among the most important issues overall, while control of honeysuckle and earthworms was ranked among the least important issues overall. These extremes may have been in part a result of participants ranking species against one another instead of considering the individual importance of each; however, the results reflect clear differences among species, in terms of how participants viewed the urgency of their control. As another example, statements pertaining to timber management, harvest, and regeneration received a range of overall ranks, but two statements about promoting oak regeneration were rated among the most highly important issues overall.

The lowest ranking issues overall from the 2013 survey were fairly consistent with 2001 survey results, with some shifts among the highest ranking issues. In terms of changes, issues that seemed to increase in importance the most over time included statements about: control of garlic mustard (biggest increase), long-term protection of forest land to conserve the forest base, and encouraging low impact logging techniques. Issues that seemed to decrease in importance the most over time included statements about: promoting forest management to improve genetic quality (biggest decrease), increasing funding for stewardship planning assistance and incentives programs, innovation and study on state forest lands, grazing of woodlands, and the need for better markets for low quality trees.

Insights from Open-Ended Questions

Open-ended comments did not elicit as much response as expected, with less than 20% of survey respondents providing additional forest issues, and about 30% providing examples of positive and negative results of land stewardship activities or issues. The most common themes that arose from these open-ended questions centered on financial or market-based issues and private land management issues. For questions about positive and negative results of land stewardship activities, positive financial-themed comments pertained to topics such as tax and cost-share programs and the Forest Stewardship program, while negative comments pertained largely to lack of capacity, especially for private landowner outreach. In terms of private land management, participants expressed both positive and negative outlooks about topics such as landowner education, forest stewardship plans, and management of forests on agricultural properties.

Implications and Next Steps

Survey respondents were nearly evenly split four ways over their views about whether overall management in southeast Minnesota had improved, declined, neither improved nor declined, or they did not know. This range of opinions likely reflects a wide variety of priorities among surveyed stakeholders. To further explore these priorities and gather feedback on potential actions and solutions, follow-up focus groups were held in September 2013; the results of these focus groups are discussed below.

G. Key Stakeholder Focus Groups Report

In order to prioritize allocation of limited resources for forest management in southeast Minnesota, the Committee implemented a non-scientific survey (discussed above) and follow-up focus groups with key forest stakeholders in Minnesota's southeast region in order to collect feedback pertaining to the most important issues related to management of the area's unique forest habitat. The Key Stakeholder Focus Groups Report details the feedback received through these focus groups, held in September 2013; the results of these discussions indicate areas where funding is most needed.

One of the most pressing issues to come out of these discussions was the need for greater capacity for private landowner education and technical assistance, an area that has seen drastic cuts in Minnesota in recent years. In conjunction with the goal of the Department of Natural Resources (DNR), MFRC, and other agencies to engage the private woodland owner community in land management, a top priority should be ensuring that the natural resources professional base is adequate to meet current – and ideally increased – demand. In the view of the focus group participants, this is not currently the case.

One potential means of both supplementing limited capacity and engaging woodland owners is through encouragement of landowner cooperation via peer-to-peer learning opportunities, such as landowner-led property tours. Other suggested means of engaging landowners and the broader public ranged from encouraging the creation or expansion of trails on private and public lands to encourage woodland activities and demonstrate forest management practices, to public services announcements and creation of a southeast Minnesota arboretum. Regulatory measures were also suggested, such as increasing restrictions on agricultural cost-share funding and tightening private land use regulations. Generally, there seems to be a need for more information in the landowner community – especially the agricultural landowner community – on the value of forest resources, in order to combat the perceived pervasive apathy toward forest management.

Another key area of funding need is management of biodiversity, especially in light of a rapidly growing invasive species problem. Funds for long-term, persistent control methods for established invasive species and rapid responses to eradicate newly discovered invasive species are needed for effective management of this complex threat to native biodiversity. Increasing tree diversity through management practices was also seen as a preventative measure for combating invasive species. While desire was expressed to maintain a component of oak in southeast Minnesota's forests, several participants discussed the need to manage for a wider diversity of species, including natural forest-successors such as sugar maple and basswood.

While priority levels for certain issues may have shifted somewhat over time, there was much overlap between issues discussed by participants in these focus groups and issues identified by the original 2001 survey discussed above. To ensure forward progress on southeast Minnesota's forestry goals, increased monitoring and accountability of local conservation efforts and availability of long-term, consistent, easily accessible funding programs that actively encourage management are needed. The results of these stakeholder focus groups and the 2013 survey have aided development of the goals and strategies for this Plan, and consequently help inform where long-term funding efforts should be focused.

Summary of Part 1

The information and insights gained through these assessments provide a holistic picture of the Southeast Landscape's forest resource and the variety of factors that influence the forested landscape. These insights, in combination with the directions set by the Sustainable Forest Resources Act, the Council, and the first generation plan, were used to develop the overall forest management vision for the region or Strategic Policy Framework discussed in Part 2 of this Plan.

Part 2
Strategic Policy Framework: Where do we want to go?

Section 3
Desired Future Conditions

The strategic policy framework or vision for guiding the sustainable management of forest resources in the Southeast Landscape starts with a series of desired future condition (DFC) statements. These statements are long-range in nature; they are intended to provide an overall sense of direction or perspective in a relatively concise format. A one hundred year horizon was used as the timeframe for the DFCs. The following narrative outlines the DFCs for forest resources in the region as established by the Southeast Regional Landscape Committee.

In approximately 100 years the Southeast Landscape will have:

- An increased component of forest land cover which contains large, uninterrupted tracts of forest and associated vegetative habitats. These intact lands provide benefits such as improved travel corridors for wildlife, recreational opportunities for society, germplasm retention, and climate mitigation. Forest health is improved and these forestlands have increased resilience to emerging threats, such as climate changes and invasive species. Other key native ecosystems such as savannah and prairie are protected and restored in appropriate locations.
- Identified natural communities and regionally significant areas; management objectives have been developed to sustain these areas. Native species are protected and their populations maintained. Exotic and invasive species are identified and their effects minimized through proper forest management. A geographic information system (GIS) of natural and cultural resource information has been developed for the region to guide planning and monitoring activities, and is continually updated. Public agencies, private organizations, and interested individuals correspond often to ensure proper management of forest resources and collaborate to promote the continued health of Southeastern Minnesota's unique environment.

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- A vibrant forest products industry that incorporates the full scope of forest-based services, including timber, agroforestry, food and medical plants, recreation, and other non-timber forest products.
- Streams, lakes, and wetlands that are surrounded by healthy riparian vegetation and dominated by native species. Timber harvest and rural and urban development are restricted close to water resources, thus reducing the potential impact on water quality. Diversity of vegetation and animals is promoted through environmental corridors on public and private land. Wild areas and park and trail facilities are managed to support the integrity of natural areas and facilitate public access and recreation.

- Best management practices (BMPs) that are emphasized in forest management activities. Education on proper implementation of BMPs is provided to contractors, developers, landowners, loggers, and managers; monitoring of their success is performed.
- Cost-share, incentive, and tax incentive programs that provide economically viable options to promote forest management are available for landowners. These programs will help protect large blocks of forest land from development. Professional assistance is readily available to forest owners to assist in forest management in order to optimize forest resources and fulfill specific forest owner goals without jeopardizing sustainability and biodiversity.
- Community and citizen groups that are active in forest management, monitoring, and restoration. Education programs for children and adults promote appreciation and stewardship of the environment.

"The artisans may strive
For years to raise
A structure reaching
To the vaulted sky,
That well deserves
The everlasting praise
And words of wonderment
From passersby,
But he, the humble man
Who plants a tree,
Is fashioning
His nation's destiny."

-Richard J. Dorer
"The Man Who Plants a Tree"

Section 4
Landscape Level Goals and Strategies

The Sustainable Forest Resources Act (SFRA) requires that the MFRC and its regional committees give equal consideration to the long-term economic, ecological, and social needs and limits of the state's forest resources. The Southeast Regional Landscape Committee addressed this legislative directive by organizing the goals and strategies in the strategic policy framework into these three traditional tenets of sustainability. As described in Section 1, the Committee integrated the vision, goals, and strategies from the first generation plan with conclusions derived from the assessments of resource data and trends and input from key stakeholders to develop the 10-year goals and strategies for this Plan. The resulting goals and strategies listed here reflect the input of key stakeholders within the region, past and present, as well as the most currently available ecological and socio-economic data related to the region's forests.

Goal 1: Ecological

Ecological Goal Statement: Total forest land will be increased and fragmentation of forest land will be decreased. Forest health and quality will be protected and increased in addition to forest quantity.

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Suggested Strategies:

1. Protect and enhance biodiversity.
   a. Protect critical habitat and limit habitat fragmentation.
   b. Manage Native Plant Communities to protect and enhance Endangered, Threatened, Special Concern species and other Species of Greatest Conservation Need.
   c. Focus biodiversity protection resources on the Blufflands Subsection, which contains the highest concentrations of biodiversity in the region.
2. Establish appropriate species on appropriate sites.
   a. Use prescribed fire in forested fire-dependent communities (e.g., oak communities). Support management of other native non-forested or low-density woodland fire-dependent ecosystems (e.g. savannah and prairie).
   b. Promote succession to a greater diversity of marketable hardwood species (e.g., sugar maple, basswood, black cherry) where it is more practical to do so.
3. Manage invasive species (e.g. buckthorn, garlic mustard, emerald ash borer, reed canary grass) with the goal of protecting biodiversity.
   a. Identify areas of invasive species infestation.
   b. Research methods for invasive species removal, control, and prevention.

   c. Secure funding for early eradication of newly invasive species.
   d. Secure funding for control of established invasive species.
4. Manage forests to increase resilience to climate change-based disturbances (see climate change recommendations in Section 5).
5. Protect and manage forests and associated habitats for water resources.
6. Promote harvest practices that protect soil and water quality and provide for adequate regeneration.
7. Develop and support policies and mechanisms to increase forest land on ecologically appropriate sites and protect the forest land base in the long-term.
   a. Encourage reforestation next to existing forested areas.
   b. Encourage landowners to promote regeneration on their forests.
8. Define, promote, and implement development patterns that sustain and enhance forest resources.
   a. Research current and future infrastructure costs in compact development versus scattered housing.
   b. Engage with regional entities (non-profits, civic leaders, agencies, planners) to discuss methods of promoting sustainable development and managing sprawl within the context of sustaining forest resources.
   c. Examine county and city plans and watershed plans for areas in which they can be enhanced with regard to forest resource conservation.
   d. Provide developers, elected officials, administrators, and planners access to online forest resources information.

Goal 2: Social

Social Goal Statement: Southeast Minnesota's private forest landowners will receive consistent technical and financial resources to implement management strategies. Natural resources planning entities will coordinate to ensure consistent delivery of education and services to these landowners. Healthy forests (public and private) will positively impact public health and recreation in the region.

Suggested Strategies:
1. Develop methods to support long-term funding and time commitments from units of government, conservation organizations, and other funding and planning entities.
2. Increase capacity of the natural resources professional community to meet current and future demand for technical advice and assistance in the private landowner community.
3. Increase monitoring efforts by conservation entities to better track the conservation benefits of funding investments (e.g. EQIP acres).
4. Increase flow of information to landowners.
   a. Provide information on long-term benefits of forest management.
   b. Provide tax law information to landowners.
   c. Develop issue papers that can be utilized for forest resources education and outreach.
   d. Update and promote forest resources contact lists for each county. Include small businesses and certification information.
   e. Maintain the Sustainable Forest Education Cooperative's regional calendar of forestry events.
5. Provide unique outreach activities such as field days, workshops, and discussion forums to various stakeholder groups, including: private woodland owners, agriculturists that own woodland or operate farms near forests, marginal cropland owners, seasonal residents and absentee owners, loggers, and elected officials.

   a. Provide workshops on stewardship planning and landscape goals.
   b. Provide silvicultural examples (e.g., forest stand improvement) for management of the diverse forests in the forested Subsections in southeast Minnesota (Blufflands, Rochester Plateau, Oak Savanna, Big Woods)
   c. Demonstrate successful management (e.g. demonstration forests).
6. Prepare and implement Stewardship Plans.
   a. Support implementation of Healthy Forests for Healthy Waters Outreach Program
   b. Encourage loggers to recommend stewardship plan creation and implementation to landowners
7. Research Southeast Minnesota private landowner demographics, interests, and management activities.
8. Encourage local natural resources organizations to remain knowledgeable about the current state of landowner forest-related tax laws and cost-share programs, seeking opportunities to eliminate redundancy and promote sustainable active management.
9. Examine private land policy in regards to water quality and public health.
10. Encourage private landowner participation in provision of forest-based recreation to the public.
11. Encourage private landowner participation in private landowner education (e.g. property tours).
12. Support environmental education activities for Southeast Minnesota citizens to foster informed environmental and natural resources decision-making.
13. Promote interest and participation among Southeast Minnesota citizens in angling, hunting, and outdoor recreation.
14. Protect drinking water quality and trout stream health through mitigation of regional nitrate/nitrite pollution via landowner education and forest/other land use management and protection.
15. Support implementation of the Big Woods Heritage Forest legislation in Le Sueur, Rice, and Waseca Counties; encourage continued work and renewed efforts toward registry of heritage forests and implementation of associated protection and restoration goals.

Goal 3: Economic

Economic Goal Statement: Forested landscapes in Southeast Minnesota will continue to support a vibrant forest products industry, support the recreation and tourism industry, and provide numerous ecosystem services. Research and project implementation will further our understanding of the full array and value of services provided by these forests.

Suggested Strategies:
1. Research long-term economic benefits of contiguous forest land, including economic value of ecosystem services.
2. Increase number of forest-based jobs by establishing larger markets for local wood, especially in counties with fastest household growth.
3. Promote forest businesses that support sustainable management of forests.
4. Establish non-traditional forest product markets (e.g., decorative greenery, dried floral arrangements and ornamentals, herbs and medicinal plants, decorative woods, cones, and smoke-woods/flavor-woods (refer to the Minnesota Harvester Handbook, University of Minnesota Extension and the MN DNR Forestry Utilization and Marketing Program website – http://www.dnr.state.mn.us/forestry/um/index.html#special).
5. Strengthen public/private sector relationships that support vibrant and diverse natural resources-based businesses which advocate the long term stewardship of the resources and that engage landowners in southeast Minnesota's forest products industry.

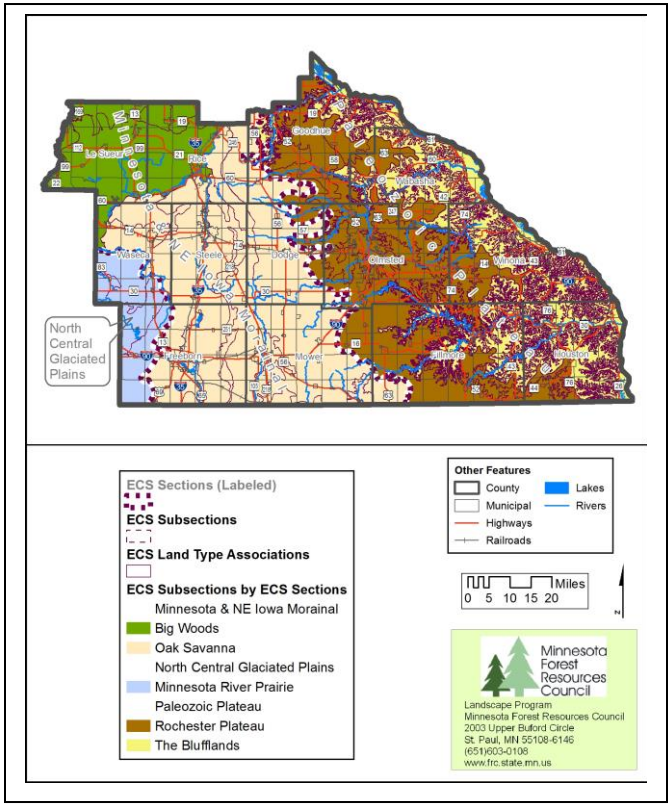
Section 5
Forest Vegetation Management Framework

In guiding the management of forest resources in the state, the Sustainable Forest Resources Act (SFRA) also requires the MFRC to develop spatial policies that: "foster no net loss of forest land and encourage appropriate mixes of forest cover types and age classes within landscapes to promote biological diversity and viable forest-dependent fish and wildlife habitats". To meet this statutory requirement, the Southeast Regional Landscape Committee decided to use the Ecological Classification System (ECS) as the geographic basis to develop vegetation management policies for the region. This section provides guidance on forestland area, forest composition, and age classes. It also provides foresters, resource professionals, and landowners with an initial set of recommendations to address climate change in relation to forest management.

A. Subsections in the Ecological Classification System (ECS)

There are five ECS subsections that intersect the Southeast Landscape (see map in the right column). These subsections represent the range of ecosystems present within the transition area from the prairie biome to eastern deciduous hardwood forest biome. The native vegetation within these five subsections reflects variations in climate across the region, as well as variations in soil conditions and topography from the historically glaciated areas in the western part of the region to the historically un-glaciated or "driftless" areas in the eastern part of the region. Detailed descriptions of the region's five subsections listed below can be found on the Minnesota Department of Natural Resources Ecological Classification System webpage (www.dnr.state.mn.us/ecs/index):

- Blufflands
- Rochester Plateau
- Oak Savanna
- Big Woods
- Minnesota River Prairie



B. Forestland Area Goals

The Committee recommends that forestland cover on ecologically appropriate sites within the region be increased by 10% by the year 2025. This would amount to an increase of approximately 72,500 acres of additional forested lands for a total of 797,625 acres. The following narrative establishes preliminary forestland cover goals for each of the five Ecological Classification System Subsections that intersect with the Southeast Landscape.

To provide rationale for these initial forestland cover goals, historical forestland acreage information is provided below. The acres of forest listed below for the pre-European settlement era are from the Minnesota Department of Natural Resources; the 2001 and 2011 data are from the National Land Cover Dataset (NLCD). It should be noted that these figures do not include oak openings and barrens, which historically covered over 1.6 million acres in the region. Combined with prairie, these two cover types prior to European settlement comprised over 3.2 million acres of the Southeast Landscape's nearly 5 million total acres. In 2011, these two cover types had been reduced to less than 400,000 acres combined. Further, the NLCD datasets (2001, 2011) include lowland shrub as well as lowland forest in the estimates provided. Bearing all of this in mind, the data below indicates that between pre-settlement era and 2011, the Southeast Landscape has lost over 459,000 acres of forest. The subsection descriptions below are summarized from the Minnesota Department of Natural Resources Ecological Classification System webpage.

Blufflands Subsection

The majority of the Minnesota portion of this subsection is located within the Southeast Landscape, covering much of Wabasha, Winona, and Houston Counties, and reaching into Goodhue, Olmsted, and Fillmore counties. The subsection's irregular shape and characteristic bluffs and valleys are due to a network of rivers and streams that dissect the landscape, including the Mississippi, Root, Whitewater, Zumbro, and Cannon Rivers. There are no lakes in this subsection, but cold-water trout streams are prevalent. Historic vegetation consisted of red oak-white oak-shagbark hickory-basswood forests on moister slopes, red oak-basswood-black walnut forests in protected valleys, floodplain forest along the Mississippi River and tributaries, and tallgrass prairie and bur oak savanna on ridge tops and dry upper slopes. The forests in this subsection provide some of the highest quality habitat in the region and the highest economic forest product values in the state.

- Total area: 1,278,527 acres.
- Pre-settlement upland and lowland forest vegetation cover: 44.2% (565,268 acres).
- 2001 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 39.8% (509,139 acres).
- 2011 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 39.7% (507,723 acres).
- 2025 Subsection Forestland Cover Goal: increase by 40,000 acres – 42.8% (547,723 acres).

Rochester Plateau Subsection

This subsection parallels the Blufflands Subsection to the west and covers most of Goodhue, Olmsted, and Fillmore Counties, and reaches into Rice, Dodge, and Mower Counties to the west and Goodhue, Winona, Wabasha, and Houston Counties to the east. A few lakes are present, as well as several coldwater trout streams to the east. Tallgrass prairie and bur oak savanna were the dominant vegetation communities, historically. Farming is prevalent in this region today and agriculture comprises the majority of land cover. Olmsted County is the fastest growing county in the Southeast Landscape, so this subsection is receiving significant development pressure from growth in and around the City of Rochester.

- Total area: 1,298,940 acres.
- Pre-settlement upland and lowland forest vegetation cover: 11.4% (148,621 acres).
- 2001 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 8.9% (115,644 acres).
- 2011 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 8.8% percent (114,905 acres).
- 2025 Subsection Forestland Cover Goal: increase by 20,000 acres – 10.4% (134,905 acres).

Oak Savanna Subsection

The Oak Savanna Subsection is located to the west of the Rochester Plateau and Blufflands subsection spanning the counties of Rice, Goodhue, Waseca, Steele, Dodge, Freeborn, Mower, and small areas of Olmsted and Fillmore. Glacial moraines in the west provided some protection from fire, historically, but not enough for the establishment of hardwood forests, which resulted in bur oak savannas as the historically dominant land cover interspersed with patches of tallgrass prairie and maple-basswood forest; however, the vast majority of the subsection is now dominated by agriculture. Urban development is accelerating along the northern boundary of the subsection in areas closer to the Minneapolis-St. Paul metro area.

- Total acres: 1,645,020 acres.
- Pre-settlement upland and lowland forest vegetation cover: 6.1% (101,076 acres).
- 2001 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 3.5% (56,799 acres).
- 2011 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 3.4% (56,453 acres).
- 2025 Subsection Forestland Cover Goal: increase by 5,000 acres – 3.7% (61,453 acres).

Big Woods Subsection

A small portion of this subsection intersects with the Southeast Landscape in Le Sueur, Rice, and Waseca counties. Many lakes, wetlands, and peat bogs are found in depressions throughout the region, which is also intersected by the Mississippi River. Historically, this region was dominated by deciduous hardwood forest, including elm, basswood, sugar-maple, bur oak, ironwood, northern red oak, and aspen. Since European settlement, there have been substantial decreases in the native deciduous forest and wetlands; approximately 10-15% of these land cover types remain, the remainder having been converted to crop and pasture lands. Agriculture dominates land cover in this part of the region due to its productive soils and low slopes. The subsection as a whole is also experiencing rapid land development due to its proximity to both the Minneapolis-St. Paul metro area and the City of Mankato.

- Total acres: 505,461 acres.
- Pre-settlement upland and lowland forest vegetation cover: 72.6% (366,716 acres).
- 2001 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 8.8% (44,247 acres).
- 2011 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 8.5% (42,727 acres).
- 2025 Subsection Forestland Cover Goal: increase by 10,000 acres – 10.4% (52,727 acres).

Minnesota River Prairie Subsection

Only a very small portion of the southeastern tip of this subsection intersects with the Southeast Landscape in Waseca and Freeborn Counties, which represents the only component of the Prairie Parklands Province within the Landscape. Tallgrass prairie, wetlands and islands of wet prairie, and floodplain forests along rivers and streams were common before European settlement; much of this area is now dominated by agriculture.

- Total acres: 251,481 acres.
- Pre-settlement upland and lowland forest vegetation cover: 1.1% (2,697 acres).
- 2001 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD): 1.3% (3,328 acres).
- 2011 upland forest, lowland forest, and lowland shrub vegetation cover (NLCD) 1.3% (3,317 acres).
- 2025 Subsection Forestland Cover Goal: maintain current total acreage of forestland, but increase forest quality by replacing exotic or native invasive tree species with native fire-dependent forest communities in appropriate locations – 1.3% (3,317 acres).

Note: As better data becomes available, the Committee will refine and update the forestland area goals to help achieve the desired future conditions listed in Section 3.

C. Forest Management Recommendations

Native Plant Communities (NPC)

A **native plant community** is a group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms. These groups of native plant species form recognizable units, such as hardwood forests, pine forests, or marshes, that tend to repeat over space and time. Native plant communities are classified and described by considering 1) vegetation, 2) hydrology, 3) landforms, 4) soils, and 5) natural disturbance regimes. Examples of natural disturbances include: wildfires, severe droughts, windstorms, and floods. Sometimes referred to as native habitats or natural communities, native plant communities are named for the characteristic plant species within them or for characteristic environmental features. Examples of native plant communities in the Southeast Landscape include Upland Deciduous Oak Forests, Lowland Deciduous Forests, and Dry Barrens Oak Savanna.

In 2003, researchers in the Minnesota Department of Natural Resources (DNR) completed the development of a classification system of the native vegetation in the state, "*Minnesota's Native Plant Community (NPC) Classification*". The DNR's NPC Classification System was developed through analysis of extensive field data collected from sample plots of forests, prairies, wetlands, and other habitats. The classification system is hierarchical, with vegetation units described at levels ranging from broad landscape-level ecological systems to local communities. More information on the NPC Classification System can be found at http://www.dnr.state.mn.us/npc/index.html.

Over the past approximately 200 years, urban and rural development have largely replaced or altered the native plant communities throughout the state. Today, across much of the Southeast landscape, there exist many kinds of vegetated areas that are not considered native plant communities. These include places where native plant communities have been replaced by cropland and pastures or in more urbanized areas – parks, yards, and road rights-of-way. Most of the plant communities in the Southeast landscape have been altered by activities such as logging, mining and land development. Pine plantations and orchards as well as recreational landscapes such as golf courses have further altered or removed native vegetation in the region.

More recently, exotic or invasive species such as buckthorn, bush honeysuckle, barberry, multiflora rose, oriental bittersweet, Japanese knotweed, garlic mustard, wild parsnip, and reed canary grass have become recognized by the public as threats to the environment. These plants are increasingly reshaping vegetation patterns across the region, at alarming rates in some instances. Furthermore, some of these plants alter site conditions, thereby making restoration difficult. Looking to the future, climate change will further increase pressure to native plant communities in the region. Yet, despite these historic and emerging challenges, high-quality examples of native vegetation can still be found in every county throughout the Southeast region despite the fact that they comprise a small proportion of the total landscape in most areas.

Forest Composition and Age Class Recommendations

The DNR's NPC Classification System provides a framework and common language for improving the ability of resource managers and landowners to: 1) inventory and map native vegetation throughout the state, 2) identify and assess existing natural areas for biodiversity

conservation, 3) identify research needs, and 4) promote the appreciation of and commitment to protecting and restoring native vegetation in Minnesota.

The NPC Classification System supports opportunities to increase the collaborative management of native vegetation at multiple scales from regional or landscape level all the way down to a site or tract of land. The Committee encourages all landowners and managers in the region to protect and restore sites to the appropriate native plant communities. The table in Appendix E provides a summary listing of the native plant community classes identified by the Minnesota Biological Survey within each ECS Subsection of the Southeast Landscape. It should be noted that these NPC Class lists are based on sample plots and may not represent an exhaustive list of native plant communities in each subsection.

The Committee encourages all landowners and managers to use the DNR's "*Field Guide to the Native Plant Communities of Minnesota"* as means to identify the appropriate native plant communities on a given site or area (see the website link www.dnr.state.mn.us/npc/classification.html).

In 2013, the DNR published the "*Suitability of Tree Species Guide by Native Plant Community*" table [to be appended in the final document]. This 2-page handout provides useful information on the suitability of specific trees species for each NPC class by floristic region. It provides managers with a ranking (**GREEN** =excellent, **BLUE** =good, **YELLOW** =fair, **GRAY**= poor, **WHITE**=not suitable) for a given tree species in each NPC class. Trees with an excellent suitability should grow well given the correct light and seedbed environments for establishment and recruitment; in these cases, little additional silvicultural treatment should be required. Trees with poorer suitability for a site can be grown to meet specific objectives but the manager or landowner should expect progressively higher costs and risks for trees grown in these NPC sites. The tree suitability table also provides generalized climate change information for all species.

Another valuable information resource developed by the MN DNR is the silvicultural interpretations. The MN DNR Division of Forestry, Ecological Land Classification Program developed Silviculture Interpretations for a number of NPC Classes in the state (www.dnr.state.mn.us/forestry/ecs_silv/interpretations.html). The Silviculture Interpretations include detailed information on a range of topics including natural disturbance regimes, stand dynamics and growth stages, tree behavior, and forest health considerations.

The Committee encourages landowners and resource managers to develop their management plans based on the goals and strategies outlined in Section 4 and 5, as well as the composition and age class or growth stage information established in the DNR's Native Plant Community Field Guide, Tree Suitability Table and Silviculture Interpretations. Plan writers working for private landowners should use these reference documents when preparing forest stewardship plans on private woodlands.

Climate Change Recommendations

Optional Climate Change Strategies

The following is a list of climate change adaptation strategies developed by the USDA Forest Service, Northern Institute of Applied Climate Science (NIACS) for the Northwoods Climate Change Response Framework. While these strategies were developed for the Laurentian

Province, which is located in the northeastern half of the state, north of the Southeast landscape region, they provide resource managers and landowners with a useful outline in the preliminary design and planning of landscape projects. The Committee has adopted this outline from the Northeast Landscape Forest Resources Plan as a menu of climate change adaptation strategies that may be adapted as appropriate to the needs and unique aspects of the Southeast Landscape and utilized in the development of Committee projects. Partners in the region are also encouraged to integrate these strategies and adapt them for projects as well.

Strategy 1: Sustain fundamental ecological functions.
a. Maintain or restore soil quality and nutrient cycling.
b. Maintain or restore hydrology.
c. Maintain or restore riparian areas.

Strategy 2: Reduce the impact of existing biological stressors.
a. Maintain or improve the ability of forests to resist pests and pathogens.
b. Prevent the introduction and establishment of invasive species and remove or control existing invasive species.
c. Manage herbivory to protect or promote regeneration.

Strategy 3: Protect forests from severe fire and wind disturbance.
a. Alter forest structure or composition to reduce risk or severity of fire.
b. Establish fuel breaks to slow the spread of catastrophic fire.
c. Alter forest structure to reduce severity or extent of wind and ice damage.

Strategy 4: Maintain or create refugia.
a. Prioritize and protect existing populations on unique sites.
b. Prioritize and protect sensitive or at-risk species or communities.
c. Establish artificial reserves for at-risk and displaced species.

Strategy 5: Maintain and enhance species and structural diversity.
a. Promote diverse age classes.
b. Maintain and restore diversity of native tree species.
c. Retain biological legacies.
d. Restore fire to fire-adapted ecosystems.
e. Establish reserves to protect ecosystem diversity.

Strategy 6: Increase ecosystem redundancy across the landscape.
a. Manage habitats over a range of sites and conditions.
b. Expand the boundaries of reserves to increase diversity.

Strategy 7: Promote landscape connectivity.
a. Use landscape-scale planning and partnerships to reduce fragmentation and enhance connectivity.

b. Establish and expand reserves and reserve networks to link habitats and protect key communities.
c. Maintain and create habitat corridors through reforestation or restoration.

Strategy 8: Enhance genetic diversity.
a. Use seeds, germplasm, and other genetic material from across a greater geographic range.
b. Favor existing genotypes that are better adapted to future conditions.
c. Increase diversity of nursery stock to provide those species or genotypes likely to succeed.

Strategy 9: Facilitate community adjustments through species transitions.
a. Anticipate and respond to species decline.
b. Favor or restore native species that are expected to be better adapted to future conditions.
c. Manage for species and genotypes with wide moisture and temperature tolerances.
d. Emphasize drought- and heat-tolerant species and populations.
e. Guide species composition at early stages of stand development.
f. Protect future-adapted regeneration from herbivory.
g. Establish or encourage new mixes of native species.
h. Identify and move tree species to sites that are likely to provide more suitable habitat under the altered environmental conditions.

Strategy 10: Plan for and respond to disturbance.
a. Prepare for more frequent and more severe disturbances.
b. Prepare to realign management of significantly altered ecosystems to meet expected future environmental conditions.
c. Promptly revegetate sites after disturbance.
d. Allow for areas of natural regeneration after disturbance.
e. Maintain seed or nursery stock of desired species for use following severe disturbance.

This menu of adaptation strategies for forest management is drawn from the *Forest Adaptation Resources* document (Swanston and Janowiak 2012; www.nrs.fs.fed.us/pubs/40543). These actions can be applied in combinations across a landscape or project area

Summary of Part 2

The strategic policy framework described through the outline of desired future conditions, goals, and strategies as presented in Sections 3 and 4 along with the recommendations in the vegetation management framework in Section 5 were developed to provide guidance for the sustainable management of forest resources in the Southeast Landscape. This framework is intended to be used by all stakeholders in the region.

Part 3 of this Plan contains a description of the specific efforts in which the Committee will engage in over the ten or more years to support the implementation of the goals and strategies in Part 2 of the Plan. Part 3 also contains recommendations to other stakeholder groups and interests that the Committee believes are necessary to the more effective implementation of this Plan.

Part 3
Operationalizing the Plan: How will we get there?

Section 6
Coordination and Implementation

Perhaps the most critical component of any plan is the part that describes how the vision will be *implemented*. Successful implementation of a regional plan that affects dozens of agencies and organizations and thousands of private landowners requires clear and useful guidance on both coordination and implementation activities. The purpose of this section is to outline the approaches and strategies that the Southeast Regional Landscape Committee believes are necessary to support the successful implementation of this Plan.

A. How Will this Plan Get Implemented? Increasing Success through Intentional Coordination

How will the ideas suggested in Part 2 of this Plan be accomplished? Who will do the work? How much will it cost? How long will it take?

As with past successes in forest management, progress is achieved through intentional **cooperation, coordination, and collaboration**. This Plan proposes to significantly increase and enhance the ways that interested persons and stakeholder groups can work together to implement sustainable forest management across the Southeast Landscape.

Amanda Kuenner

It is important to remember the regional context of this document and that its primary role is to describe how to coordinate and facilitate sustainable forest management by the vested stakeholders. The primary groundwork throughout the Southeast Landscape will continue to be done by private landowners, farmers, foresters, loggers, land managers, resource agency staff, and local officials – among others. The Committee's primary role is to support the overall coordination of this Plan through approaches described in this section.

While the **planning horizon** for MFRC landscape plans typically span 100 years or longer, the **implementation horizon** for this Plan is ten to twenty years. After five to ten years, parts of the Plan may need to be reconsidered as current data and resources merit. The MFRC and the Committee should collectively determine the point at which this Plan needs to be either amended or revised as time moves forward.

B. Coordination Strategies

Regional committees and subcommittees meet on a regular basis to coordinate land management activities and support the development and implementation of collaborative projects. In general, MFRC landscape plans are implemented through six approaches including:

- Encourage consideration of the landscape-level context by all agencies and landowners when developing their management plans and projects.
- Coordinate and support projects by partnering with organizations that promote sustainable forest management practices in the landscape.
- Develop and implement committee-led projects that proactively address the goals and strategies outlined in the landscape plans.
- Securing of funds for Committee and partner project development and implementation.
- Monitor activities and outcomes of projects implemented by the committees, as well as those by partnering organizations and landowners across the landscape; measure and evaluate effectiveness in meeting the landscape plan goals.
- Raise awareness of the value of functioning forest ecosystems.

By working through a series of coordinated strategies with stakeholders in the region, each partnering entity that participates in the coordination and implementation of this Plan will more likely experience significantly increased benefits from forest resources over time. The following is a list of coordination strategies that were designed by the Committee to significantly enhance the implementation of this Plan:

- Support and maintain the Committee.
- Promote implementation of the Plan through the Committee's partners' plans.
- Actively support the development of forest policy that is necessary to achieve the goals in this Plan.
- Develop and advocate regional priorities to guide Plan implementation in the region.
- Promote cross-boundary collaborative projects.
- Expand and sustain outreach.

Coordination Strategy #1: Support and Maintain the Southeast Regional Landscape Committee

One of the primary ways that the MFRC sustains the Landscape Program is through its ongoing funding and staffing support of the regional committees. This allows the regional committees to more effectively support the coordination, implementation, and monitoring of the landscape plans.

With the revising of this Plan, it is an appropriate time for the Committee to review its membership and operations. The Committee should also address its budgetary needs to support the coordination of the Plan. Funding for the MFRC and its programs, including the Landscape Program comes from the state general fund. The MFRC operating budget has and will likely continue to support staffing for the basic operations of the Landscape Program and the regional committees. In light of significant operational budget cuts over the last eight years, to remain effective increased funding from the State's general fund for the Landscape Program and the MFRC overall is needed.

In addition to the operating budget, the MFRC budget has provided seed moneys to the regional committees. These funds, while relatively small, are designed to help initiate collaborative projects in each region developed by the regional committees that demonstrate ways to implement the goals and strategies in the landscape plans. In the Southeast region, these funds have been used to help support some of the opportunity area projects and match outside grant funds. While the Landscape Program budget has not been designed to be a primary source of implementation dollars, the seed funding has helped to leverage additional funds for sustainable forest projects in the region, described later in this section. As the Committee begins its second generation of coordination and implementation efforts, restoring the operational budget to its historically higher level and securing additional funding to support Committee-led projects will be critical to the successful implementation of this Plan.

Coordination Strategy #2: Expand and Sustain Outreach

One of the key steps in encouraging partners to integrate the goals and strategies in this Plan into their strategic resource management plans as well as actively participate on collaborative projects is to increase their awareness of the Plan itself. The Committee will develop and implement an outreach strategy that increases awareness of the vision set forth in this Plan and how other organizations can support Plan implementation. The outreach strategy will include efforts such as workshops, presentations, direct mailings, individual contacts, and the placing of documents on the MFRC website.

Coordination Strategy #3: Promote Implementation of the Landscape Plan through Partners' Plans

One of the primary ways that MFRC landscape plans are implemented is through the integration of goals and strategies from the landscape plans into the forest and related natural resource management plans developed by partners in the region. The Committee should actively encourage all agencies, organizations, industry, and private landowners to integrate the goals from this Plan into their resource management plans and implementation projects. The Committee should:

- Review existing and proposed forest and related resource management plans to see how they fit with this Plan's goals. Documents to review include: DNR Subsection Forest Resource Management Plans, fish and wildlife management plans, water resource management plans, and Forest Stewardship Plans. In regards to Forest Stewardship Plans, the Committee should propose translations of the goals and strategies from this Plan that can be inserted into Forest Stewardship Plans.
- Determine how much each landowning entity (e.g., State, Federal, local, private) can voluntarily contribute toward the Plan goals in terms of time and resources.
- Look for ways to cooperate and coordinate on-the-ground management activities to achieve the Plan goals.
- Work with partners to analyze the cumulative effects of current and planned activities across the region.

Assist MFRC staff in collecting necessary monitoring information as described in the "Monitoring & Evaluation Framework" of this Plan.

Coordination Strategy #4: Working with Partners

As a part of the development of this Plan, the Committee developed an outline of recommendations to assist stakeholder groups in finding specific strategies that apply to their organizations and interests (see "Recommendations to Agencies and Organizations"). These recommendations, if addressed by partnering groups, will increase the ability of the Committee to more actively develop necessary coordination efforts that support the successful implementation of this Plan.

Coordination Strategy #5: Actively Support Forest Policy Development

As established in the SFRA, the landscape committees are to provide regional perspectives to the MFRC on a broad range of sustainable forestry matters. With this statutory responsibility, regional committees play a critical role in shaping forest policy in Minnesota. The Committee will continue to support this by providing recommendations to the MFRC in the future as a part of the Council's strategic forest policy development program and on relevant forest policy matters.

Coordination Strategy #6: Develop Regional Priorities to Guide Implementation in the Region

Over the past ten years, the Committee provided input to various federal and state agencies as well as non-profit organizations responsible for making major funding decisions. One of the key federal processes in which the Committee has been active is the State Forest Action Plan (FAP) process. The FAP process, required by the 2008 U.S. Farm Bill, guides the use of federal forestry funds allocated to the states. The Committee commented on various steps in the state's FAP process, helped refined the inventory and assessment, edited the implementation matrices, and prioritized the plan's ten major issues. Members representing the Committee have recently been awarded federal funds that are now guided by the state's FAP process.

In terms of state-level action, the Committee is also involved in guiding the use of funds generated through Minnesota's Legacy Amendment. The Committee provided input to the Minnesota Legislature through its Lessard-Sams Outdoor Heritage Council (LSOHC) on the investment of these state sales tax-generated funds designated to support habitat conservation over a 25-year timeframe. The state invests over $70 million per year for the protection, restoration and enhancement of forest, wetland and prairie habitat. There have been several habitat projects in the region funded by the LSOHC that members of the Committee identified in their report to the LSOHC as priorities for public investment for habitat. Further, the Committee is working to development a Healthy Forests for Healthy Waters initiative within the region that will utilize funds from the Clean Water Fund portion of the Legacy Amendment.

The Committee will continue to provide input to funders in order to help set meaningful priorities for the region that promote the implementation of this Plan. The Committee will forward those recommendations to the MFRC and the appropriate major funders on a periodic basis. The Committee also intends to support increased coordination among partners in the region to secure additional federal and state funding for collaborative projects over the life of this Plan.

Coordination Strategy #7: Promote Cross Boundary Collaborative Projects

Since 2003, the Committee has coordinated and supported numerous collaborative projects (see Appendix G) to support the implementation of the first generation plan. The Committee has been highly successful in securing federal grants through the US Forest Service State & Private Forestry Program to support these collaborative projects. It should be noted that some of the funds from these federal grants were used to help support the preparation of this Plan.

Generally, the Committee projects have been one of the following three types: 1) outreach and education, 2) research and development, and 3) "on-the- ground" pilot or demonstration projects. Some of the Committee projects include two annual woodland owner workshops, the Forest Bank project, and the Whitewater and the Root River watershed Landscape Stewardship projects. Funding for two additional Landscape Stewardship projects, the Cannon and Zumbro watersheds, has recently been secured by Committee members.

The Committee will continue to support the coordination and implementation of its current projects. The Committee will also seek out new Landscape Stewardship projects within the region that promote collaborative or cross-boundary efforts, both local and multi-state, that support the implementation of this Plan, the state's FAP, the 25-Year LSOHC Habitat Vision, and other relevant policy documents. The Committee will develop and refine these potential projects through its 10-YearWork Plan and Annual Work Program development process described later in this section.

C. Implementation Approaches

One of the primary challenges facing regional committees in implementing landscape plans is to determine where to start, especially considering the large geographic area that the MFRC landscape regions cover. A second major challenge in implementing landscape plans is the complicated land ownership patterns. There are thousands of individual landowners within the approximately 5 million-acre Southeast Landscape, most of who own tracts smaller than 160 acres. Each landowner is responsible for making decisions on how to manage their land making landscape level goals more complicated to attain. With over 85 percent of the forestlands in the Southeast Landscape under private ownership, successful implementation of this Plan will require finding increasingly effective ways to work with larger numbers of private woodland owners on an ongoing, sustained basis. Sustainably managing private woodlands over a large region is a daunting task.

Approaches to Private Forestlands

The state's Private Forest Management (PFM) program, which works in conjunction with the federal Forest Stewardship Program, is administered by the DNR Division of Forestry. One of the primary services the PFM program coordinates – in cooperation with other agencies and private consulting foresters – is forest stewardship planning and project planning/implementation for private woodland owners. Property-specific management plans provide technical advice and long range forest management planning to interested landowners. The plan covers the entire property except for active agricultural acres that will remain as such. This stewardship plan voluntary program is open to qualified private landowners, including corporations whose stocks are not publicly traded and own between 20 - 1,000 qualifying acres of land. Project planning and implementation is available to all landowners.

While Minnesota's PFM Program is considered one of the premier state private lands assistance programs in the country, budget cuts over the past ten years and especially in the last two biennia, have seriously eroded the program's capacity to serve. In Fiscal Year 2010 and 2011, the PFM Program was funded through $2 million from the State general fund annually, USDA-Forest Service grants between $300,000 and $400,000, and with additional grants used to pay consultants and cost-share practices. Since FY 2011, the state general allocation has decreased seventy-five percent, or $1,500,000 per fiscal year, and federal grants have decreased by over 50 percent. These cuts have severely reduced the capacity within the DNR's Private Forest Management Program to carry out its mission. Inconsistent funding flows over the past 10 to 15 years have further complicated effective service delivery to landowners and coordination by the myriad of public and private sector service providers. These kinds of financial challenges facing private forest management programs have occurred in other states as well. In response to these challenges, the Minnesota DNR has proactively sought out collaborative opportunities with partners both within and outside the state, including the US Forest Service.

Promoting private forest management is a fundamental mission of the U.S. Forest Service. Historically, one of its principal tools to support that mission has been the Forest Stewardship Program. Over the past decade, about 7.5 million acres of privately-owned forestland in the 20 northeastern U.S states have benefited from the program. Yet this represents only about 8 percent of all privately-owned forestland in the Northeast and Midwest U.S. In response, Secretary of Agriculture Tom Vilsack stated: "We must dramatically accelerate the scale and pace of forest stewardship …on both public and private lands."

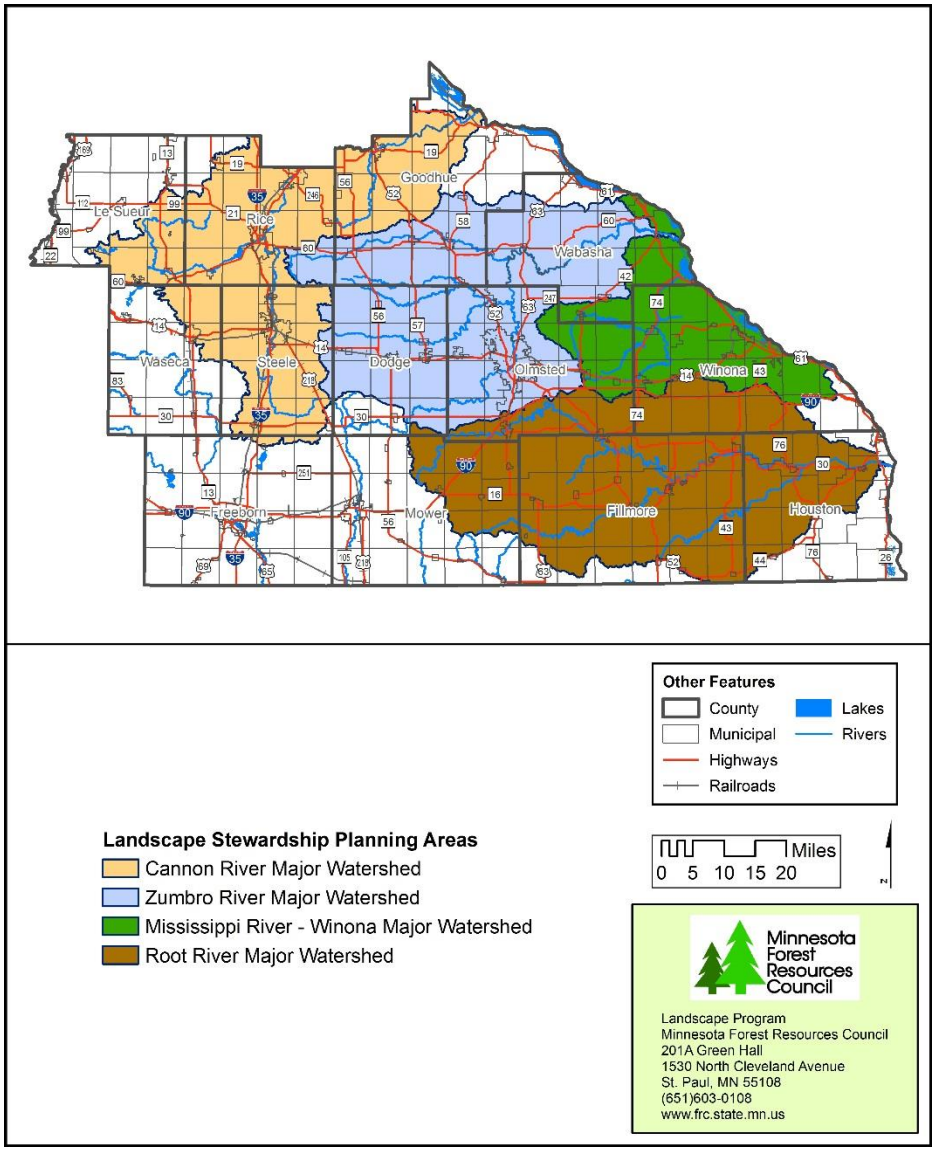
In 2008, the US Forest Service created the Landscape Stewardship Initiative to address declining budgets coupled with increasingly complex challenges facing the management of private woodlands. The U.S. Forest Service determined that significantly different approaches to private forest management are needed if meaningful progress is to be made on addressing the threats facing privately-owned forestlands across the nation. The purpose of the Landscape Stewardship Initiative is to develop more effective tools, approaches and strategies that will enable the broader forestry community to dramatically expand the reach and effectiveness of services provided to private woodland owners.

Integrate Landscape Stewardship Efforts with the State Forest Action Plans

Concurrent with the state FAP process required by the US Congress, the US Forest Service initiated the Landscape Stewardship Initiative. The intent of integrating these two federal efforts is to help states work with local and private partners to address priority issues and opportunities on private lands concurrent with managing issues related to other priority areas identified in a state's FAP. The expected results will help to keep forests as forests across the nation and ensure continued contributions to forest management, clean water, climate change mitigation, and the many other benefits forests provide. States are strongly encouraged by the US Forest Service to work with local partners to integrate the FAP process with their landscape stewardship projects. As such, states that do so, will likely receive more federal funding.

Over the past six years, the Committee has been awarded five grants from the US Forest Service to develop demonstration landscape stewardship projects. The Forest Bank project and four landscape stewardship plans are being developed through these federal grants. The Committee is developing methods and systems to support the implementation of the state's FAP through these projects and will continue to do so. Furthermore, these projects are helping the Committee demonstrate to the DNR and its PFM program methods to significantly increase the delivery of services to private woodland owners in innovative and cost-effective ways with the support of the federal grants.

The Committee's four landscape stewardship projects are based on a watershed-based geography and are shown on the map to the right.

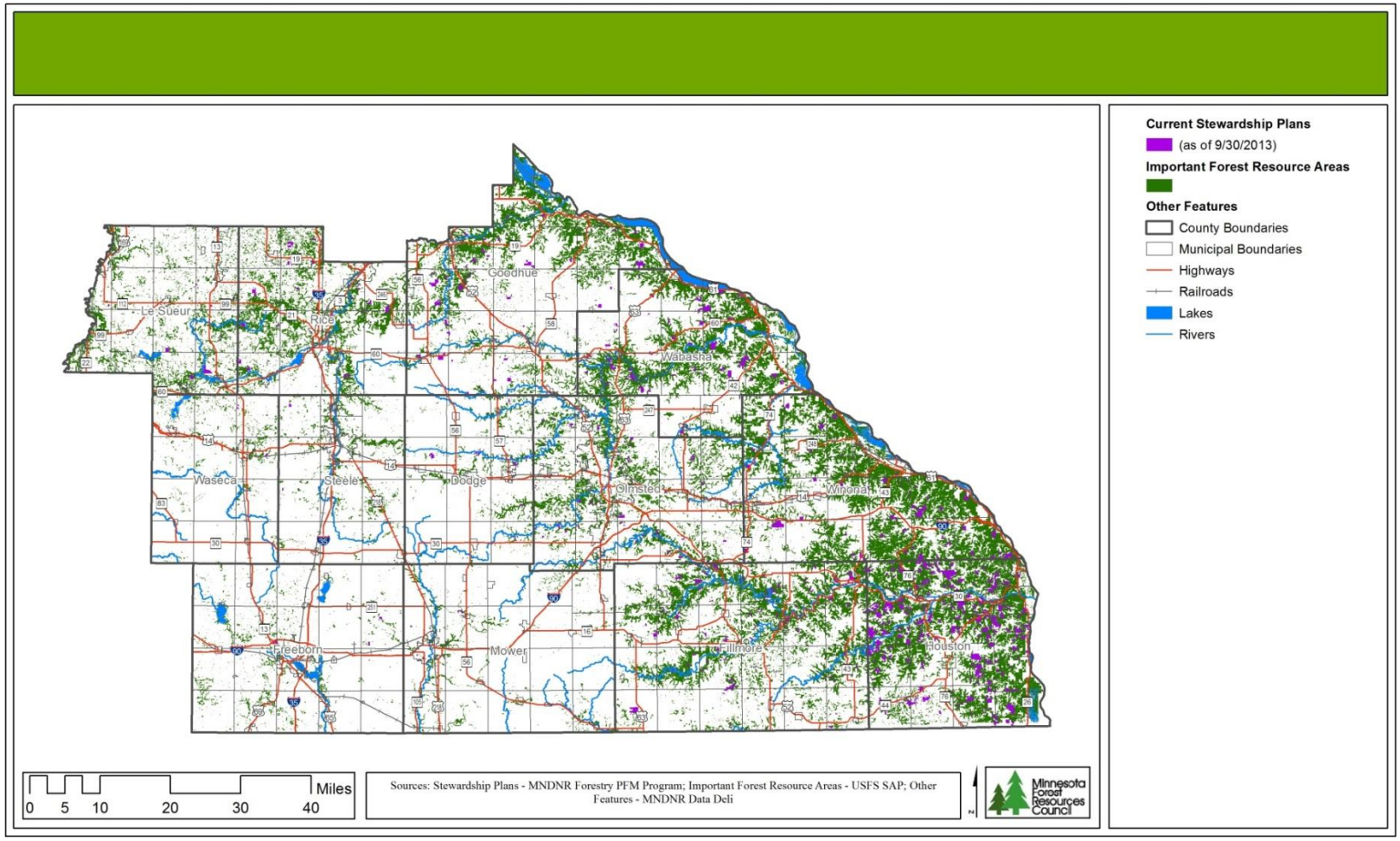


Important Forest Resource Areas

The Spatial Analysis Project (SAP) is a GIS mapping tool initially developed by the US Forest Service and prepared by each state forestry agency to identify and spatially display important private forest lands that are rich in natural resources. Tracts that are currently under forest stewardship plans are also mapped to help identify areas of opportunity to focus future Forest Stewardship Program efforts. One of the purposes of this mapping effort is to help promote the strategic delivery of services to private landowners over traditional 'first-come, first-served' basis. The figure and table below illustrate Important Forest Resources Areas (IFRAs) in the Southeast Landscape.

As reported on the table and the map (below), there are over 826,000 acres of IFRA lands in the Southeast Landscape. As of September 30, 2013, there were just under 69,000 acres of private land with a registered forest stewardship plan, with approximately 41,000 acres of these areas having a current plan (a plan less than 10 years of age and registered with the DNR). While not all forest stewardship plans are registered with the DNR and there are yet other lands receiving varying degrees of professional forestry assistance without site specific management plans, there is a significant amount of land in the region not under professional management or consultation through the Forest Stewardship Plan process.

The IFRA map and related data provides the Committee with a starting point to strategically focus future efforts in promoting private forest management. This map and data is being used in the selection and development of current and future landscape stewardship projects in the region.


Current Stewardship Plans
(as of 9/30/2013)
Important Forest Resource Areas
Other Features
County Boundaries
Municipal Boundaries
Highways
Railroads
Lakes
Rivers
Goodhue
Le Sueur
Rice
Wabasha
Waseca
Steele
Dodge
Olmsted
Winona
Freeborn
Mower
Fillmore
Houston
0 5 10 20 30 40
Miles
Sources: Stewardship Plans - MNDNR Forestry PFM Program; Important Forest Resource Areas - USFS SAP; Other Features - MNDNR Data Deli
Minnesota Forest Resources Council

Important Forest Resources Areas (2008) and Forest Stewardship Plans (9/30/2013): Southeast Region and State of Minnesota

	Southeast Region	Minnesota
Acres covered by current forest stewardship plans	66,870	618,682
Acres of Important Forest Resource Areas	826,556	9,898,192
Acres in Important Forest Resource Areas covered by current Forest Stewardship Plans	41,184	415,893

Important Forest Resources Areas (2008) and Forest Stewardship Plans (9/30/2013): Counties in the Southeast Region

County	County Area	Acres of current forest stewardship plans (FSPs)	Acres of Important Forest Resource Areas*	Acres in Important Forest Resource Areas covered by current Forest Stewardship Plans
Dodge	281,164	1,001	14,084	429
Fillmore	551,460	7,935	115,611	5,242
Freeborn	461,960	384	11,691	70
Goodhue	499,093	5,305	90,800	1,707
Houston	363,942	31,094	154,875	21,982
Le Sueur	303,022	1,090	34,000	467
Mower	455,010	191	14,370	113
Olmsted	418,743	2,857	65,429	1,332
Rice	329,914	2,372	56,653	1,132
Steele	276,476	99	15,341	67
Wabasha	351,374	6,802	94,775	4,125
Waseca	276,947	125	8,005	68
Winona	410,324	7,614	150,922	4,449
Total	**4,979,428**	**66,870**	**826,556**	**41,184**

* Note: Not all Important Forest Resource Areas (IFRAs) are classified as forestland. These areas include acres of private land that are suitable for forests, but may currently be in another land use (e.g., agriculture).

Source for above two tables: Spatial Analysis Project (2008). More information at: http://www.fs.fed.us/na/sap/products/mn.shtml

Approaches to Public Forestlands

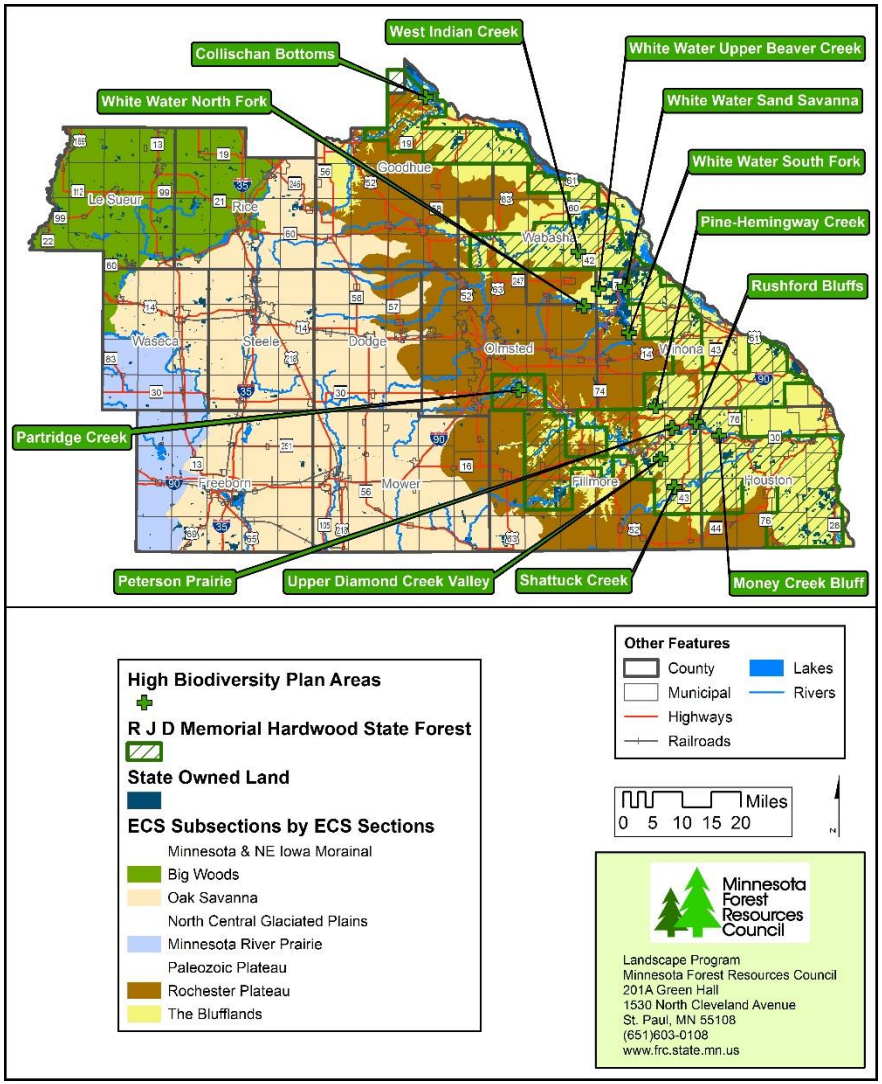
While not as extensive in land area, public forest lands in the Southeast Landscape protect some of the most environmentally sensitive areas in the state (see the map below and the Conditions and Trends Report).

The DNR Subsection Forest Resource Management Plans are the primary plans developed for guiding the operational management of the state forest and wildlife lands in the region. From 2002 to 2009, members of the Committee worked closely with the DNR to prepare a series of more intensive management plans for these critical areas within the state owned lands in the region. A total of eight high biodiversity plans were prepared (see the Forest Policy Inventory Report and the narrative in Section 2 of this Plan) to supplement the Blufflands/Rochester Plateau Subsection Forest Resource Management Plan. These more detailed plans provide specific ecological management guidance to improve decision making and resulting practices made on lands within the areas of high biodiversity.

Through this focused planning effort, members of the Committee built strong working relationships with DNR land managers. With staffing changes and retirements over the past five or so years, this partnership needs to be re-visited and strengthened to better support the collaborative working relationships between the DNR and partners in the region over the next ten years.

Public land managers in the region are encouraged to refer to the desired future conditions, goals, strategies, objectives and action items developed in this Plan and integrate them into their plans, programs, and projects. Partnering agencies and organizations in the region are also encouraged to support the collaborative implementation of Committee-led projects.

In regards to public land management in the region, the



Note: Only the Rochester Plateau and Blufflands Subsections have been assessed for High Biodiversity Plans. Plans for Upper Diamond Creek Valley, Peterson Prairie, Rushford Bluffs, and Shattuck Creek have not yet been completed.

Committee will focus its efforts over the next ten years on: 1) supporting public land acquisitions of high priority sites, 2) coordinating resource management efforts on private lands in areas adjacent to and around the high biodiversity sites as identified in the DNR High Biodiversity Plans (see map above) as well as other sites identified by public agencies as having critical habitats in the region, and 3) supporting outreach efforts to citizens and local officials about the benefits of protecting high priority sites.

D. Southeast Regional Landscape Committee Priorities in Plan Implementation

The desired future conditions, goals and strategies outlined in Section 4 provide a holistic, long-range vision for all stakeholders in the Southeast landscape to proactively address critical forest management issues. This vision, while encompassing of key issues, will take a considerable amount of resources to fully implement. To support the successful implementation of this vision, all landowners and resource managers will need to and are strongly encouraged to use this Plan as a foundation for developing their own management plans and to guide decision-making processes that affect forest resources in the region.

As described in the Coordination Strategies narrative (pp. 6-2 – 6-5), the Committee will play a major role in supporting the coordination and implementation of this Plan. However, as the Committee has limited resources and funding to coordinate and implement the full range of goals and strategies in Section 4, it will need to focus its resources strategically. The plan revision process presented an opportunity for the Committee to identify priorities that it will take the lead on. Through this plan revision process, the Committee devised a two-stage process to administer its efforts over the life of this Plan including a 10-Year Work Plan and Annual Work Programs.

10-Year Committee Work Plan

The 10-Year Committee Work Plan (pp. 6-13 – 6-17) is intended to summarize specific steps that the Committee will take over the next decade to support the robust implementation of strategic portions of the overall vision presented in Part 2. The 10-Year Work Plan provides the Committee and its primary partners with detailed directions for implementation described through a series of nested objectives and action statements. It bears repeating that the objectives and action items outlined in this section do not represent the full range of steps needed to implement all of the goals and strategies outlined in Section 4. Rather than develop objectives and actions for each goal and strategy, the Committee chose to focus its resources on developing objectives and actions that the Committee could feasibly undertake during the 10-year life of this Plan.

The 10-Year Committee Work Plan outlined in this section will be used as a foundation for developing the Committee's Annual Work Programs. This approach to the planning process will allow the Committee to adapt its management efforts throughout the implementation timeframe. Feedback from the monitoring program and ongoing input from Committee members will be incorporated into the Work Plan through the development and implementation of the Annual Work Programs.

Annual Committee Work Programs

The 10-year listing of objectives and actions will be used as a foundation for the preparation of Annual Work Programs for the Committee. The format for the Annual Work Programs is provided in Appendix F. As a component of the Committee's overall coordination and implementation approach, Annual Work Programs will be developed to identify which specific actions will be taken during the upcoming year. Progress on the Annual Work Programs will be reported in Annual Reports, which will be presented to the MFRC and made publically available online.

E. 10-Year Committee Work Plan

The following objectives and actions are organized into the same three goal categories used in Section 4 – ecological, social, and economic. It should be noted that some objectives relate to multiple strategies in Section 4. To help link the Committee's objectives and actions to the goals and strategies, the strategy or strategies that each objective addresses are noted in brackets after each objective, coded by goal number and strategy number (e.g. Goal 1, Strategy 3 = [G1-S3]).

Goal 1: Ecological

Objective 1: Protect and manage 10,000 acres of critical habitat containing native plant communities. [G1-S1; G1-S3; G1-S7]

- Action 1A: Secure adequate funds to protect native plant communities with conservation easements or acquisition to transfer land into public ownership (State Forests, Wildlife Management Areas, Scientific and Natural Areas, State Parks, and Aquatic Management Areas).
- Action 1B: Direct resources toward native plant communities on public and private lands in priority complexes for invasive species management, prescribed burns, and regeneration.

Objective 2: Establish a working forest easement program (in progress) tailored to Southeast Minnesota. [G1-S7]

- Action 2A: Develop guidance for the conservation easement program.
- Action 2B: Build community and local government unit support and acceptance for the program.
- Action 2C: Work with leadership in the Minnesota Board of Water and Soil Resources and the Minnesota Department of Natural Resources to negotiate program acceptance.
- Action 2D: Include a request for program funds in local government unit Biennial Budget Requests, Clean Water Fund Applications, and bonding requests.

Objective 3: Establish a Forest Bank program. [G1-S7]

- Action 3A: Complete a scenario analysis and individual landowner interviews.
- Action 3B: Complete a business plan.
- Action 3C: Develop an organizational structure.
- Action 3D: Secure necessary capital and operating funds.
- Action 3E Support a fiscal administrator and garner agency support for the program.

- Action 3F: Secure initial properties to enroll in the program.
- Action 3G: Carry out timber and resource management on enrolled properties.

Objective 4: Direct Natural Resource Conservation Service (NRCS) Environmental Quality Incentive Program (EQIP) conservation assistance funds and State conservation funds, including Clean Water Fund money, toward regional priority areas. [G1-S1; G1-S7]

- Action 4A: Serve on State Technical Committee and engage Minnesota State agency-level Clean Water Fund money.
- Action 4B: Support the implementation of the Healthy Forest Healthy Waters Program. Coordinate the development of project funding through federal and state funding sources.

Objective 5: Perform prescribed burning on eight sites of 200 acres or more. [G1-S2; G1-S3]

- Action 5A: Secure adequate State and Federal funding (e.g., Clean Water Fund, Lessard-Sams Outdoor Heritage Fund, USDA-Forest Service) to plan, prepare, and execute prescribed burns on private and public lands within priority areas.
- Action 5B: Conduct prescribed burns for ecological restoration and oak regeneration at a large scale in and surrounding State land assets.

Objective 6: Encourage both the selection of and the sale/distribution of seedlings that support appropriate species choices as suggested in the MN DNR Native Plant Community Field Guide, Tree Suitability Table and Silviculture Interpretations, as well as recommendations from the US Forest Service. [G1-S2; G1-S4]

- Action 6A: Work with the nurseries to offer climate-appropriate planting materials.
- Action 6B: Work with MN DNR Division of Forestry and other resources agencies to provide ECS and NPC training to plan writers, resource managers and vendors working in the region. Encourage the integration of these concepts into forest stewardship plans and other management plans developed for areas in the region.

Objective 7: Support and enhance early detection and management of forest invasive species. [G2-S4]

- Action 7A: Work with University of Minnesota Extension, Minnesota Department of Agriculture, and Minnesota Department of Natural Resources to sustain and grow early detection and management programs that include elements of volunteer and citizen scientist engagement via education and outreach.
- Action 7B: Work with nurseries to cease the sale and distribution of invasive plants.
- Action 7C: Recognize Cooperative Weed Management Areas and work with existing areas to encourage development of new areas.

Objective 8: Support efforts by cities in the region to plan for tree species diversity in new developments in areas that are currently dominated by monocultures. [G1-S2; G1-S8]

- Action 8A: Provide educational outreach and communication on innovative ways to guide new urban development in ways that more effectively protect and conserve forest resources. Develop a project and seek funding that could be implemented by city governments to resolve urban issues and use as a tool for outreach.
- Action 8B: Support urban forestry initiatives that promote a diverse and healthy urban forest (e.g., Tree City USA; Minnesota Tree Care Advocates).

Objective 9: Support research and promotion of agricultural and forestry practices that protect soil and water. [G1-S5; G1-S6]

- Action 9A: Promote sustainable agricultural practices such as cover cropping, avoiding fall tillage, including hay in crop rotations, avoiding nitrogen application, and leaving harvest residue.
- Action 9B: Support a forest buffer program to reduce soil run-off and herbicide drift.
- Action 9C: Promote and incorporate education and field days that address these issues and encourage landowner participation in these sustainable practices and in conservation/agricultural assistance programs.
- Action 9D: Support agroforestry initiatives.

Objective 10: Support existing and new demonstration projects that will assist landowners in conversion of pasture and cropped acres to woodland [G1-S7].

- Action 10A: Draft project requirements.
- Action 10B: Assemble a list of interested landowners.
- Action 10C: Apply for funding or seek funding source to have funds available to distribute to interested landowners for project purpose.

Objective 11: Incorporate strategies identified in this Plan into the Blufflands/Rochester Plateau Subsection Forest Resource Management Plan. [G2-S1]

Goal 2: Social

Objective 1: Work with the Minnesota Forest Resources Council to establish monitoring protocols and supporting funding for the Regional Landscape Committees; include outcome-based planning and program administration in protocols and budget requests. [G2-S1; G2-S3]

- Action 1A: Develop Annual Work Programs based on strategies, outcomes, and action items identified in this Plan; monitor and report activity to the Council.

Objective 2: Support efforts to improve the 2c Managed Forest tax law (2c), the Sustainable Forest Incentive Act (SFIA), and other tax and incentives programs by broadening enrollment and requiring performance standards (e.g., management activities). [G2-S8]

- Action 2A: Work with the Minnesota Forest Resources Council to support forest landowner tax and incentives programs (2c and SFIA).
- Action 2B: Make policy recommendations through the Minnesota Forest Resources Council to require a certain level of performance associated with recommended management practices for all plans enrolled in a tax or incentive program.
- Action 2C: Work with landowners and plan writers to increase registration of management plans with the Department of Natural Resources; require plan registration for the SFIA program (as is currently required by the 2c program.)

Objective 3: Work with MN DNR Private Forest Management program foresters in the region to encourage the integration of the goals and strategies in this Plan (e.g. habitat quality improvement) into forest stewardship plans for private landowners.

Objective 4: Work closely with regional partners to engage landowners. [G2-S4, G2-5, G2-S7, G2-S8, G2-S11]

- Action 4A: Work closely with regional partners to engage woodland owners in forestry education.

- Action 4B: Work with Extension/University of Minnesota to fund outreach, education and research related to forestry issues in SE MN. Possible funding sources include local (e.g., Destination Medical Center), state (e.g., Legislative Citizens Committee on Minnesota Resources), and federal (e.g., Renewable Resource Extension Act, Farm Bill).

Objective 5: Complete the Root River, Whitewater, Cannon and Zumbro landscape stewardship plans and share with participants and relevant stakeholders. [G2-S1; G2-S3; G2-S4]

- Action 5A: Distribute plans to stakeholders; specifically engage public and private landowners identified within Conservation Opportunity Areas described in the Landscape Stewardship Plans.

Objective 6: Complete Landscape Stewardship Plans and incorporate into complimentary watershed-based plans, including but not limited to the Minnesota Pollution Control Agency's Watershed Resource and Protection Strategies (WRAPS) and the Minnesota Board of Soil and Water Resources One Watershed, One Plan (1W1P). [G2-S1; G2-S9; G2-S14].

- Action 6A: Distribute plans to stakeholders; specifically engage public and private landowners identified within Conservation Opportunity Areas described in the Landscape Stewardship Plans.

Objective 7: Develop land-appropriate forest-based recreation on publicly administered lands, i.e. hunting, hiking. [G2-S4; G2-S12; G2-S13]

- Action 7A: Support the development and implementation of surveys that capture recreational uses of public forest lands.

Objective 8: Support coordination of partnering agencies for implementation of the goals described in this Plan. Identify specific actions that each agency could bring to the table. [G2-S1, G2-S2, G2-S3, G2-S4, G2-S7]

- Action 8A: Discuss ideas for these actions at Committee meetings.
- Action 8B: Share completed Plan with participating partners.

Objective 9: Survey landowners on demographics, interests, and management activities at relevant events. [G2-S7]

- Action 9A: Define specific goals for information collection; target specific geographical areas of interest.
- Action 9B: Develop a consistent set of questions for use between multiple collecting agencies.
- Action 9C: Create and maintain a central database for responses.

Goal 3: Economic

Objective 1: Support existing and emerging forest products markets for Southeast Minnesota. [G3-S1; G3-S2; G3-S3; G3-S4; G3-S5]

- Action 1A: Develop an industry outreach/engagement strategy to strengthen relationships between the public and private sectors; facilitate discussion with local forest products industry to encourage growth of local markets.
- Action 1B: Promote the notions of "wood is good" and "buy local wood" for new developments in the Southeast Landscape.

Objective 2: Perform an economic analysis for the Forest Bank program. [G3-S2]

- Action 2A: Produce an economic analysis for the Forest Bank that includes forest products, secondary markets, and jobs associated with the program.

Objective 3: Encourage a state-wide "check-off" funding from industry to support forest protection and management. [G3-S5]

- Action 3A: Explore economic impact and feasibility of green industry "check-off".
- Action 3B: Encourage industry adoption of best management practices for forest management practices concerning invasive species, such as those adopted by the Minnesota Department of Natural Resources through operational orders.

Objective 4: Engage in other Southeast Minnesota local planning activities. [G3-S5]

F. Work Planning and Programming by Partners in the Southeast Landscape

Other natural resources agencies and organizations in the Southeast Landscape are encouraged to adopt a similar two-stage approach to administering their implementation efforts. The formats of the Committee's 10-Year Work Plan and Annual Work Programs are example formats for regional partners who may be interested in creating similar implementation structures.

As work planning documents are developed by resource agencies and organizations, these partners are encouraged to reference specific goals and strategies from Part 2 of this Plan. Partners are also encouraged to share their work programs with the Committee on a periodic basis. Further, partners are encouraged to report accomplishments back to the Committee on a regular basis to support the overall monitoring and evaluation of this Plan.

Section 7
Monitoring and Evaluation Framework

This section serves as an outline for monitoring and evaluating the implementation of this Plan over the next decade. The Southeast Regional Landscape Committee will be responsible for coordinating monitoring efforts. The Committee will periodically review progress made towards the implementation of this Plan, both short and long term, based on information provided by partners in the region and report their findings to the Minnesota Forest Resources Council. These efforts should then become part of a larger state-wide monitoring effort developed by the DNR and supported by the other MFRC regional landscape committees in cooperation with partnering natural resources agencies.

A. Background

Monitoring and evaluation are fundamental components of landscape-level management and are identified in Minnesota Statute 89A.07 of the Sustainable Forest Resources Act as:

"The DNR Commissioner shall maintain a program for monitoring broad trends and conditions in the state's forest resources at statewide, landscape, and site levels. To the extent possible, the information generated under the monitoring program must be reported in formats consistent with the landscape regions used to accomplish the planning and coordination activities specified in section 89A.06."

The SFRA furthers states, *"To the extent possible, the program must incorporate data generated by existing resource monitoring programs."* The SFRA also calls for compliance and effectiveness evaluation of forest management activities.

The Committee based this next generation monitoring and evaluation program on this legislative direction.

Amanda Kuener

B. Results from the First Generation Southeast Landscape Plan

The 2003 Southeast Landscape plan included a brief outline for monitoring activities across the region that focused on activities occurring on privately-owned lands. This outline was based on the plan's two major goals including:

- Goal 1: Increase Forest Land. Monitor and report on indicators every year (e.g., number of stewardship plans prepared, acres enrolled in plans, implementation activities conducted, timber harvests, buckthorn removal).

- Goal 2: Decrease Fragmentation from Development. Monitor and report on indicators every year. Indicators could include: 1) zoning 2) land use patterns, 3) variances issued, and 4) population.

An annual monitoring program to monitor broad trends and conditions of forest resources in the Southeast Landscape was not formally developed by the DNR during the past ten years. And while some information relating to the above monitoring topics requested by the Committee in the first generation plan has been compiled in the supporting documents developed as part of this plan revision process, including the Conditions and Trends Report and the Demographic Data Report, the monitoring story is incomplete. For example, there were 66,870 acres of land with an active Forest Stewardship Plan as of September 30, 2013; yet as the DNR's Private Forest Management Module (PFMM) database is currently being developed, comparable data from previous years is not available. Budget and staffing cuts to the PFM program over the past four or more years have significantly slowed down the development of this critical database. Furthermore, adequate funding and staffing resources to the MFRC Landscape Program were not provided to assist in supporting the DNR in its responsibility for data collection needed to meet the directive set by the SFRA or for ongoing monitoring desired by the Committee.

Appendix G provides a brief summary of accomplishments completed by the Committee and partners in the region on implementing the goals and strategies in the 2003 Southeast Landscape plan from 2003 to 2013. Despite the challenges of having limited staff resources from the MFRC Landscape Program, modest seed funding for coordination projects, and a small group of core volunteers – the accomplishments table reflects a substantial body of work that was accomplished over the past ten years in the implementation of the first generation plan.

With a modest investment of state General Funds into the MFRC and its Landscape Program over the next ten years, at minimum restoring previous allocation levels from the state legislature, coupled with the federal grants that the Committee has secured over the last five years, the Committee strongly believes that significantly more progress can be made toward implementation of this Plan.

There are several budgetary, logistical, and operational reasons for the failure to develop a monitoring program for landscape-level management, including: 1) much of the data needed to support such a monitoring effort is often not collected and organized at a landscape level, 2) data collection systems change in scope making use of the data not feasible, 3) managing agencies have not been required to report data on a landscape basis, and 4) a clear, coordinated approach to monitoring has not yet been envisioned nor funded. This plan revision process provided the Committee with an opportunity to develop an outline to guide the creation of a practical and meaningful monitoring and evaluation process.

Assuming a modest budgetary increase by the state legislature to the MFRC and its Landscape Program and the creation of a coordinated monitoring program with the DNR – including monitoring efforts at the MFRC landscape level – the Committee decided to develop a monitoring and evaluation program to support this second generation Plan. The following narrative is intended to help initiate the development of a more robust, collaborative, and meaningful monitoring and evaluation program.

C. Outline for the Second Generation Southeast Landscape Plan Monitoring & Evaluation Program

The Committee recommends that the following two basic questions be addressed to evaluate the implementation and effectiveness of this Plan:

1. Resource Trend Monitoring (long term): Are management efforts moving the Southeast Landscape towards the forest resource management goals outlined in the Plan and fulfilling the requirement of the SFRA?
2. Implementation Monitoring (short term): Are management actions being carried out in a manner that is consistent with the Plan goals and strategies?

It is important to emphasize that implementation of this and all MFRC landscape plans is voluntary and that the proposed monitoring program should be viewed as a means to improve and enhance coordination in the management of forest resources on landscape to sub-landscape levels. This process is not intended to subject partners to any type of enforcement or regulatory action. Another important consideration in monitoring forest resources is that longer timeframes are required to be able to document change. Users of this Plan are encouraged to take these factors into consideration.

Resource Trend Monitoring: Are management actions moving the Southeast Landscape towards the goals outlined in the Plan?

Forestland Cover

As described earlier in Section 5, one of the primary policy directives in the Sustainable Forest Resources Act (SFRA) is to "foster no net loss of forestland". The National Land Cover Database (NLCD) administered by the Multi-Resolution Land Characteristics (MRLC) Consortium, a group of federal agencies that create and distribute United States land cover data for public use, provides forest land cover in relatively consistent formats and at regular intervals of time (five year intervals, e.g., 2001, 2006, 2011) across the state. It is anticipated that the federal government will continue to support this data collection. Datasets such as the NLCD are fundamental to making useful forestland cover comparisons over time to help evaluate the state's policy of no net loss of forestland. Using this dataset, the Committee has organized the table below as a simple, meaningful and cost effective way to monitor forest land cover trends across the region as well as for the five ECS subsections. The Committee will report results to the MFRC, DNR, and partners in the region every five years (e.g., 2016, 2021, 2026) as NLCD data as well as other satellite image-based datasets becomes available.

	Pre-settlement (1850 – 1890)	**2001 (NLCD)**	**2011 (NLCD)**	**2016 (NLCD)**	**2021 (NLCD)**	**2025 (Goal)**
Southeast Landscape	**1,184,378**	**729,157**	**725,125**			**797,625**
Blufflands	565,268	509,139	507,723			547,723
Rochester Plateau	148,621	115,644	114,905			134,905
Oak Savanna	101,076	56,799	56,453			61,453
Big Woods	366,716	44,247	42,727			50,227
Minnesota River Prairie	2,697	3,328	3,317			3,317

Note: The above table reflects total combined acres of upland forest and woody wetlands (lowland forest, lowland shrub).

Forest Composition and Age Class

As the second generation efforts of coordination and implementation of this Plan matures over the next five to ten years and beyond, the Committee should further explore in conjunction with the DNR, the use of the U.S. Forest Service's Forest Inventory and Analysis (FIA) data and other relevant sources to help establish long term trends of forest composition and age class of forestlands in each ECS subsection.

Additional research and reporting work on forestland cover, net volume, net growth, removals, mortality, and other relevant information from FIA should be gathered and evaluated on regular time intervals. The Committee should review this data on five-year intervals at a minimum.

This effort should be developed after there is a review of available data sets, the preparation of a clear scope of work and assigning of workloads, and the allocation of funding adequate to support the work.

Private Forest Management Monitoring

Given the importance of private land ownership in the Southeast Landscape, tracking accomplishments of activities relating to private forestland management is essential to monitoring progress made on implementing this Plan. Given the budget reductions to the Private Forest Management program, members of the Committee will take steps to assist DNR staff in developing and organizing this information into the PFMM where possible.

Partners working on landscape stewardship projects should support the collection of data regarding services provided to landowners such as forest stewardship plan writing and outreach activities and share that information with DNR Forestry staff. Data to complete the following table should be developed by DNR Forestry through its Private Forest Management Module (PFMM) and provided to the Committee on an annual basis.

The table below illustrates a proto-type format for annual reports for private forest management activities in the Southeast Landscape*.

	Blufflands	**Rochester Plateau**	**Oak Savanna**	**Big Woods**	**Minnesota River Prairie**	**Total SE Landscape**
Total Area in SE Landscape (acres)	1,278,527	1,298,940	1,645,020	505,461	251,481	4,979,428
Private Land (acres)	Add data	Add data	Add data	Add data	Add data	Add data
Important Forest Res. Areas (acres)	Add data	Add data	Add data	Add data	Add data	Add data
Technical Assistance						
Site visits						
Forest stewardship plans (number)						
Forest stewardship plans (acres)						
Incentive Programs						
Cost share assistance						
SFIA						
2c						
Conservation Land Protection						
Conservation easements acquired						
Public land acquisitions						
Managed Private Forestlands						
Level 1 (acres)						
Level 2 (acres)						
Level 3 (acres)						
Level 4 (acres)						

*Note: This table has intentionally been left incomplete since it is intended to be a template for future use as the data becomes available.

Implementation Monitoring: Are management actions being carried out in a manner that is consistent with the Plan?

The Committee developed a series of monitoring questions specific to each one of the strategies in Section 4 of this Plan as a starting point to develop this portion of the monitoring program. In addition to the list of questions, the Committee identified potential data sources that could be used to help answer the monitoring questions. This information has been summarized in a table format and is provided in Appendix H.

This Plan lays out an ambitious framework for promoting sustainable forestry across the region over the next ten years. After the approval of the Plan, the Committee will need to prioritize the strategies in Section 4 to help identify which are the most important areas to focus efforts on. To support this priority setting process, the Committee should consider applying the "SAM" principle to select the strategies to gather information on. When setting priorities, the Committee should consider the following questions for each objective in the Implementation Monitoring table:

1. Is the strategy: (S) significant?
2. Is the strategy: (A) attainable?
3. Is the strategy: (M) measurable?

Technical Support Documents

As noted in Section 1, the MFRC recommended that the regional committees follow a general planning process in developing landscape plans. One of the important steps is to assess and document resources in the region. The MFRC has prepared several technical support documents for both the first and second generation plans. These documents not only helped to inform the planning process but also support the overall monitoring effort. These documents, which are summarized in Section 2, support the observation and documenting of numerous major trends relevant to sustainable forestry including:

- Amount of forestland, timberland, and other land uses.
- Ownership of forestland.
- Composition of forestlands and age class structures.
- Timber volume and quality.

The following reports should be maintained and updated every ten years to support landscape planning efforts in the region:

- Resource Atlas.
- Demographic Data Report.
- Conditions & Trends Report.
- Forest Policy Inventory.

Cooperation and Funding

Obtaining relevant data from partners that is both useful and scalable at landscape to sub-landscape levels is essential to the effective monitoring of this Plan. Land managers and resource agency staff in the region need to share data and information regarding their activities in ways that can be used to evaluate progress towards the Plan's goals and objectives in order for this landscape-level monitoring program to be successful.

Furthermore, there needs to be adequate budgets and staff resources available to the DNR and MFRC to prepare the monitoring and evaluation documentation. The Committee notes that inadequate resources and commitments for the first generation monitoring program resulted in fewer opportunities to more fully fund and evaluate the implementation of the first generation Plan.

While the Committee recognizes public resources for monitoring are limited, it recommends that the MFRC work closely with the MN DNR and other partners in the region to inform the legislature that adequate funding resources are needed to support the development and maintenance of a meaningful monitoring system.

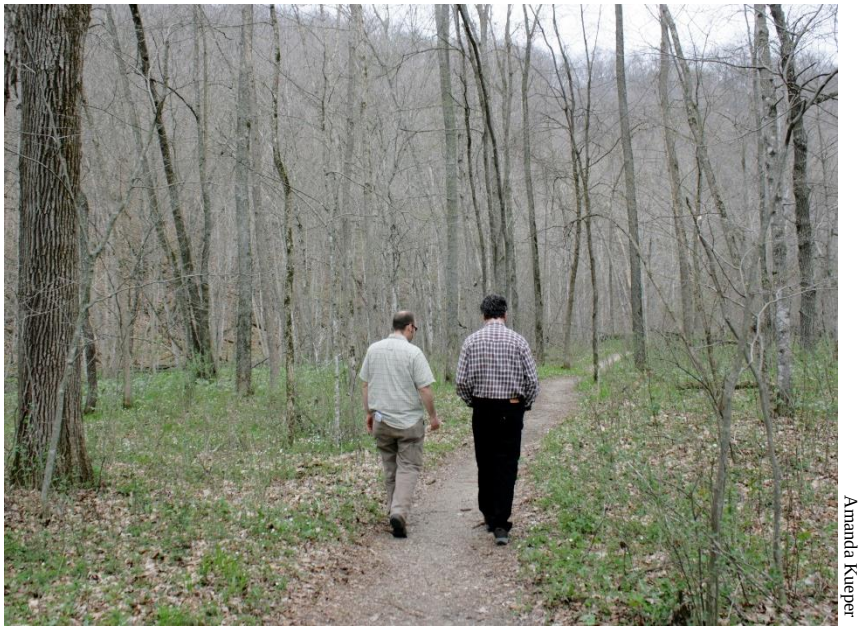
In conclusion, it is essential that partners and the public be aware that the landscape management process, including monitoring and evaluation, is voluntary, and that the primary purpose of landscape-level monitoring is to support and enhance sustainable forest resource management in the region.

Section 8
Recommendations to Agencies and Organizations

The purpose of this section is to summarize specific recommendations from the Southeast Regional Landscape Committee to regional and state-wide agencies and organizations that work toward sustainable forest management. The intent is to assist these entities in identifying specific strategies that may apply to their organizations or personnel interests. Robust implementation of this Plan depends upon decisions and actions by partners that extend beyond what the Committee itself can accomplish.

A. Overview

One overarching recommendation from the Committee was to encourage all organizations, agencies, landowners, and citizens, to use this Plan and the corresponding maps and data in as many ways as possible. As a regional level plan, it is intended to provide a broad context on how forest resources can be managed sustainably.



Amanda Kueper

Another recommendation for users of this Plan is to follow the example set by the Committee with the development of the Objectives and Action Items in the 10-Year Work Program (Section 6) to implement the regional Goals and Strategies developed for this second generation Plan (Section 4). Southeast Landscape partners – natural resources agencies, organizations, and other stakeholders – are encouraged to develop Objectives and Action Items as well as Annual Work Programs that fit their organizational visions, goals, and resources. Widespread participation in the implementation of this Plan among regional partners will help ensure that the Goals and Strategies are met to the fullest extent possible.

The following represents an initial list of recommendations from the Committee:

B. Recommendations to Private Landowners and Citizens

1. There are numerous local, state and federal programs and resources to help landowners manage their private woodlands. The Committee recommends that private landowners become more informed about these programs and actively manage their lands through sustainable forestry practices. Private woodland owners are encouraged to implement practices on their land that are consistent with the goals and strategies in this Plan as well as the site level best management practices (BMPs).
2. Citizens and landowners should encourage their elected officials at local, state, and federal levels to support sustainable forestry policies and practices.
3. Citizens should encourage land developers and the real estate community to implement practices that conserve and enhance forest resources on their lands when designing new development.

C. Recommendations to Local Officials

1. Local officials are encouraged to incorporate a more comprehensive consideration of forest resources into their land use planning processes. Extensive mapping and data regarding forests and other natural resources in the thirteen-county region have been developed for this Plan. This information can be extremely useful in both local land use planning and implementation efforts.
2. Local officials are encouraged to support development ordinances and zoning regulations that protect sensitive ecological communities and features through maintenance of continuous, high quality habitat in these sensitive areas; an example of a sensitive area is along the Decorah Edge, a geologic feature in the Blufflands Subsection that filters drinking water for many southeastern Minnesota communities.
3. Maintaining healthy forests in a watershed is one of the best methods for protecting high quality water resources; local officials are encouraged to integrate the information developed in this Plan into their local water plans.
4. Local officials are strongly encouraged to refer to this Plan as a reference document when constructing public infrastructure projects that affect forest resources.
5. Local officials are encouraged to consider the values and benefits that forests can bring to their communities. Healthy and sustainable forests promote a high quality of life for citizens and can support increased economic opportunities as well.

D. Recommendations to Conservation and Non-governmental Organizations

1. Continue to partner with land management entities to support sound planning, management, and education efforts which address major ecological, economic, and social resource management issues in the region.
2. Use this Plan as a reference document when developing plans and strategies.
3. Work with landowners to increase awareness of forest resource issues and provide a link to opportunities available to address these issues.
4. Support the connection of citizens and elected officials with sustainable forest management topics.

E. Recommendations to Resource Agencies

1. The Committee recommends that resource agencies in the region integrate concepts from this Plan into their management plans and policies. Work with partners to ensure ecological, economic, and social goals are being achieved across the landscape and that your organization is contributing to the achievement of these goals and objectives.
2. Promote the Ecological Classification System (ECS) and Native Plant Community (NPC) system as a guide to developing land management strategies. Include NPC classification in stand examination procedures and use this information to inform cover type site selections.
3. Identify and protect important or critical ecological areas within the region.
4. Support the collection, organization and evaluation of data collected relating to forestry and encourage the coordination and sharing of data with other resource agencies and local officials.
5. Find ways to more effectively support and foster economic development opportunities for the primary and secondary forest products industries in the region. Work with partners to ensure a sustainable and predictable supply of timber to the regional mills.
6. Improve the delivery of technical and financial assistance on forest management to private landowners. Find ways to increase funding for the private forest management program.

F. Recommendations to Education Groups

1. Combine sustainable forest management with other educational areas such as water resource, land use, economic development, etc.
2. Promote and support sustainable forest education programs that connect informed citizens with elected officials. Encourage the connection of elected officials with their constituent groups through natural resource education programs.
3. Colleges and universities throughout the state are encouraged to connect their students and faculty with the goals of landscape-level planning and find ways to support its implementation.
4. Colleges and universities throughout the state, and in the southeastern part of the state especially, are encouraged to expand their forestry curriculums to contain a focus on hardwood management.

H. Recommendations to the Forest Products Industry

1. Continue to participate on the Committee.
2. Expand participation on Committee projects such as the Forest Bank project.
3. Logging professionals are encouraged to implement harvesting practices that are consistent with the goals and strategies in this Plan as well as the site level best management practices (BMPs).

G. Recommendations to the MFRC

1. The Committee recommends that the Council seek increased funding through the state legislature to restore staff capacity to 1997-1998 levels for the MFRC Landscape Program to maintain the Committee's ongoing operations.
2. Secure sustained funding that increases seed moneys for collaborative projects.
3. Support an increase in funding to support the private forest management program administered by the DNR to effectively serve more landowners.
4. Ask the Committee to host the annual meeting and tour in 2015.
5. Provide political and funding support for forest economy, partners' implementation activities, and advancing policy that supports sustainable forestry in southeast Minnesota – such as establishing 2c performance standards, appropriate zoning regulations, and a working forest easement program – as recommended by the Committee.